

Environmental Management Strategy - Operations

Orica, Richmond Vale Ammonium Nitrate Emulsion Plant

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Table of Contents

Executive Summary	i
1.0 Introduction	1
1.1 Background	1
1.2 Scope	1
1.3 Environmental Policy	3
2.0 Planning	5
2.1 Environmental Aspects	5
2.2 Legal and Other Requirements	6
2.2.1 Project Approval	6
2.2.2 <i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	7
2.2.3 <i>Explosives Act 2003 & Explosives Regulation 2013</i>	8
2.2.4 <i>Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017</i>	9
2.2.5 <i>Cessnock Local Environmental Plan 2011</i>	9
2.3 Objectives and Targets	9
3.0 Implementation	11
3.1 Roles and Responsibilities	11
3.2 Training, Awareness and Competence	12
3.3 Communication	13
3.3.1 Internal Communication	13
3.3.2 External Communication	13
3.4 EMS Documentation	15
3.5 Document Control	16
3.6 Emergency Preparedness	16
4.0 Checking and Corrective Action	19
4.1 Monitoring and Evaluation	19
4.2 Non-conformance and Corrective and Preventative Action	20
4.3 Records	20
4.4 Audit	21
4.4.1 Internal Audits	21
4.4.2 Independent Audits	21
5.0 Review	23
6.0 References	25
Appendix A	
Project Approval	A
Appendix B	
Environmental Aspects Register	B
Appendix C	
Example ANE Plant Induction	C
Appendix D	
Site Induction Assessment Form	D
Appendix E	
Summary of Training	E
Appendix F	
Summary of Notifications	F
Appendix G	
Summary of Reporting	G
Appendix H	
Inspection Checklists	H

Appendix I	
Table of Monitoring Measures	I
Appendix J	
Summary of Auditing	J

List of Tables

Table 1	Project Approval Requirements - Schedule 4, Condition 1	1
Table 2	Objectives and Targets	9
Table 3	Roles and Responsibilities	11
Table 4	Emergency Contacts	17
Table 5	Routine Inspections	19

Executive Summary

This Environmental Management Strategy (EMS) for Orica's Ammonium Nitrate Emulsion (ANE) Facility at Richmond Vale provides an overview of environmental management at the Facility and its associated lands. The EMS outlines the environmental management principles and practices that will be implemented during the ongoing operations of the ANE Facility and its associated lands. The EMS has been prepared in accordance with Condition 1, Schedule 4 of the ANE Facility Project Approval (09_0090). The EMS provides the framework for environmental management at the Facility and its associated lands, but does not encompass all that is required for compliance with the Approval. The Approval is provided in Appendix A and should always be referred to as the primary compliance document.

Environmental management at the ANE Facility reflects Orica's environmental policy and commitment to manage its activities with concern for people and the environment. Orica's policy sets the framework for this EMS – and together with consideration of the specific environmental aspects and potential impacts of the Facility and its associated lands; and recognition of applicable legislation to which Orica subscribes - forms the basis upon which the objectives and targets within this document have been set.

The key environmental factors and aspects at the ANE Facility and its associated lands include: hazards, traffic, noise, air and odour, waste, ecology, bushfire, Aboriginal and historic heritage and water management. The EMS identifies the potential risks to the environment related to each environmental aspect on key factors, and outlines measures to mitigate potential environmental impacts. Mitigating measures include the implementation of the various site-specific management plans that are in place to manage site risks, and Orica's suite of Safety Health and Environment (SH&E) procedures that are mandatory at all sites.

This EMS communicates the roles and environmental responsibilities for the implementation of environmental management at the ANE Facility and its associated lands. In addition, measures to facilitate implementation, training, communication, documentation, and emergency preparedness requirements have been outlined along with steps for checking, undertaking corrective action, and reviewing environmental performance and management at the site.

These aspects: enable the EMS to remain relevant; ensure that progress is being made toward the environmental objectives and targets; provide a feedback mechanism for improvements; and enable changes in environmental legislation and site management to be reflected in the EMS.

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1.0 Introduction

1.1 Background

This Environmental Management Strategy (EMS) has been prepared for Orica Australia Pty Limited (Orica) and outlines the management measures proposed to mitigate the potential environmental impacts that may occur during operations at Orica's Ammonium Nitrate Emulsion Facility (ANE Production Facility) at Richmond Vale, NSW. It covers operations at the ANE Facility undertaken in accordance with the Project Approval (09_0090, as modified), the project approval application (Umwelt, 2009, Environmental Assessment (EA)) and subsequent modifications for the production of up to 250,000 tonnes per annum of ANE at Orica's Technical Centre site at Richmond Vale.

Condition 1, Schedule 4 of the ANE Facility Project Approval requires Orica to prepare and implement an EMS to the satisfaction of the Director-General¹ of the NSW Department of Planning, Industry and Environment (DPIE). The requirements of Condition 1 are shown at Table 1 below. The Project Approval is provided at Appendix A.

Condition 7, Schedule 2 of the Project Approval allowed for the submission of documents to the Director-General on a progressive basis. Consequently, a Construction EMS (Umwelt, 2010) was prepared and then approved by the Director-General on 7 October 2010 prior to the commencement of construction in accordance with the Project Approval. This EMS is for the operational phase of the ANE Facility.

This EMS provides a framework for environmental management at the ANE Facility. It is an overarching document that outlines the environmental management principles and practices - the plans, procedures, legislation and actions - that are in place, or that will be implemented, to meet Orica's environmental commitments during the ongoing operations of the ANE Facility and its associated lands, and to mitigate possible environmental impacts associated with the Facility.

1.2 Scope

This EMS brings together a number of components which collectively provide a means of achieving and demonstrating commitment to managing and minimising the potential impacts associated with operations at the ANE Facility.

The EMS covers only the site considered as the ANE Facility and its associated lands (such as the access road and the offset area) subject to the Project Approval, and not the adjacent Technical Centre.

This EMS has been developed in accordance with Condition 1, Schedule 4 of the Project Approval. The requirements of Condition 1 and where these requirements have been addressed in this EMS are shown at Table 1. This EMS has also been prepared in accordance with the requirements of ISO 14001: 2015.

Table 1 Project Approval Requirements - Schedule 4, Condition 1

Requirement	Where Addressed in this EMS
<i>The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to the commencement of construction, and:</i>	This EMS
<i>a. Provide the strategic context for environmental management of construction and operation of the Project;</i>	Section 1.3
<i>b. Identify the statutory requirements that apply to the Project;</i>	Section 2.2

¹ The Director-General is now referred to as the Secretary, however for consistency with Project Approval requirements, this document will continue to reference the Director-General.

Requirement	Where Addressed in this EMS
c. Describe in general how the environmental performance of the Project would be monitored and managed;	Section 2.1 & Section 4.1
d. Describe the procedures that would be implemented to:	Section 3.3.2.1
- Keep the local community and relevant agencies informed about the operation and environmental performance of the Project;	
- Receive, handle, respond to, and record complaints;	Section 3.3.2.2
- Resolve any disputes that may arise in relation to operations at the Project;	Section 3.3.1
- Response to any non-compliance;	Section 4.2
- Manage cumulative impacts;	Section 2.1
- Respond to emergencies; and	Section 3.6
e. Describe the role, responsibility, authority and accountability of all the key personnel involved in environmental management of the Project.	Section 3.1

The ANE Facility operates from 4.00am – 9.30pm Monday - Friday and requires three employees on discrete shifts. The facilities, activities, products and services at the ANE Facility considered in this EMS, include:

- Arrival of raw materials (Ammonium Nitrate Solution (ANS), palm oil, yubase 3 and diesel oil, thiourea, urea, acetic acid, caustic soda, solid ammonium nitrate, potable water and process water) at the ANE Facility via road transport;
- Truck weighing, loading and unloading facilities;
- Dedicated storage facilities for raw materials;
- A manufacturing plant for the production of up to a maximum of 250,000 tonnes per annum of ANE;
- Emulsion storage;
- Oxidiser solution batching;
- Companion (ammonium nitrate) solution manufacture and storage;
- Heat exchanger and cooling tower;
- Loading of emulsion, and companion solution produced at the ANE Facility onto road transport for distribution;
- An office facility, storage shed, ANE plant control room, electrical switch room, and plant quality control laboratory;
- Security fencing and maintenance of perimeter fire-breaks;
- Rainwater harvesting, storage and reuse;
- Firewater storage; and
- Surface water / firewater controls.

The ANE Facility has the capability to produce up to 250,000 tonnes of ANE per annum. Average total daily heavy vehicle movements associated with the ANE plant at full production is expected to be approximately 100 (i.e. 50 into the site and 50 out of the site).

The ANE Facility Manager has overall responsibility for this EMS and supporting documentation.

1.3 Environmental Policy

Orica's organisational Safety, Health and Environment (SH&E) Policy sets the framework for this EMS. Together with consideration of the site-specific environmental aspects and legislation applicable to the ANE Facility and its associated lands, the Policy forms the basis upon which the objectives and targets within this document have been set. Orica's SH&E Policy has been defined and endorsed by Orica's senior management and it is a requirement that the Policy is known and understood by people at all levels of the organisation.

Orica's SH&E² Policy includes the following aspiration and actions:

OUR SAFETY, HEALTH AND ENVIRONMENT ASPIRATION

To conduct our business in a way that causes no harm to the health and safety of our people, our customers or the community, and minimises our impact on the environment.

OUR SAFETY, HEALTH AND ENVIRONMENT ACTIONS

We will achieve our Safety, Health and Environment aspiration by: always being mindful of risk; ensuring our people are capable and empowered; and focusing on always improving.

Always mindful of risk

- *We implement rigorous Standards and Procedures to ensure our people succeed in their work.*
- *We seek to eliminate or minimise our Safety, Health and Environment risk, leveraging the hierarchy of controls.*
- *We reduce our environmental footprint through minimising waste and fresh water use, minimising pollution and efficiently using resources.*
- *We verify and monitor how our risks are being managed at the frontline and comply with all relevant Safety, Health and Environment legislation, internal policies and standards.*

Capable & empowered

- *Our people are engaged, understand their responsibilities and have the resources, training, competency and systems to successfully execute their tasks.*
- *Our people have all Safety, Health and Environment information that is relevant to their work and their wellbeing.*
- *We only proceed with work when we know we can do it safely, and we are empowered to stop work if unsafe.*

Always improving

- *We create and maximise opportunities to learn and improve.*
- *We investigate and manage Safety, Health and Environment incidents and implement actions to prevent recurrence in order to drive continuous improvement.*
- *We monitor, report and drive continual improvement of our Safety, Health and Environment performance including the setting of objectives, targets and KPIs.*

Orica's approach to site SH&E management is based on thorough identification of hazards and assessment and control of risks through:

- Management ownership and responsibility for SH&E performance which is active and visible at all levels;
- Clear SH&E expectations and objectives for managers and employees of both Orica and contractors;

² Orica, March 2017, SH&E Policy, <http://www.orica.com/About-Us/Governance/Corporate-Governance-Policies>.

- Involvement of all project participants including Orica and Contractors in the SH&E management program;
- Comprehensive SH&E Procedures and instructions which:
 - Comply with the Orica SH&E Management System and regulatory requirements, and
 - Are understood by all personnel working on the Project.
- Programs to help people anticipate potential injuries and incidents and to encourage personal action to minimise risk, such as:
 - Job Safety and Environment Risk Analysis (JSERA) Program;
 - Job Start;
 - Periodic Toolbox Talk Meetings;
 - Behavioural Safety Program;
 - Monthly Safety Meetings; and
 - Incident Investigation Process.
- Project SH&E standards which are not compromised by conflicts in schedule, cost or quality objectives.

2.0 Planning

2.1 Environmental Aspects

The potential environmental aspects and impacts of the planned operational activities at the ANE Facility are presented in the Environmental Aspects Register at Appendix B. The aspects were determined from the EA, site inspection, and discussion with Orica staff.

The key environmental aspects identified were:

- Hazard and risk;
- Traffic;
- Noise;
- Air and odour;
- Waste;
- Ecology;
- Bushfire;
- Aboriginal and historic heritage, and
- Water management.

The Register of Environmental Aspects identifies the potential risks to the environment related to each of the environmental aspects and applies a ranking system in order to allow priorities for action to be established ranging from “high” risk to “low” risk. The matrices to determine risk are also provided at Appendix B.

The most significant potential hazard at the ANE Facility relates to potential critical incidents at the site – such as a spill, explosion or fire. To reduce the possibility of any such hazard, the site has been designed, and is managed to reduce the potential for possible incidents; and controls are in place to protect the safety and health of workers, and to protect the environment.

The measures to mitigate identified potential environmental impacts are included in the Register. Mitigating measures include implementation of the various site-specific management plans that are in place to manage site risks, and Orica’s SH&E Procedures that are mandatory at all sites.

The Register will be reviewed every two years, and changes to the identification of aspects, the assessment of risk, and the identification of control measures to reduce the risk will be implemented as required.

Orica Procedure “GS.18 Risk Management” defines requirements for ongoing systematic identification, assessment and management of SH&E risks associated with Orica’s activities, products and services. The procedure includes processes for:

- Identification of potential hazards events and environmental aspects;
- Assessment of the level of risk from hazardous events and environmental aspects;
- Identification of control measures to reduce the risk;
- Identification and communication of the “basis of safety” for the facilities;
- Selection of the critical control measures which warrant and require ongoing management to assure their integrity;
- Review of hazards, risk, and control measures:
 - Prior to the introduction of changes;
 - When new information regarding hazards and risk becomes available, and
 - At defined intervals.

In addition Orica Group Procedure “SHES Assurance” describes the requirements for the periodic conduct of “Significant Risk Audits” to verify the suitability and effectiveness of the measures in place to manage high priority significant risks. In association with these procedures, the risk management procedure “SHES Risk Management for Operating Sites” describes the requirements for the assessment and control of hazards at existing sites via “Periodic Hazard Studies”.

2.2 Legal and Other Requirements

This section identifies the environmental legislative requirements to which Orica subscribes at the ANE Facility (as at February 2020). It lists legislation applicable to the site, under which Orica holds permits or licences, or adheres to criteria that must be in place for current operations.

Should the scope of current operations change, or if a development application is to be lodged for alterations or extensions to the ANE Facility or its associated lands, applicable legislation and environmental planning instruments should be investigated, and this section should be updated, to ensure currency.

2.2.1 Project Approval

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) provide the framework for environmental planning in NSW. Under Part 3A of the EP&A Act (now repealed), Project Approval for the ANE Facility was granted by the Minister for Planning on 26 July 2010. While Part 3A of the EP&A Act was repealed in 2011, transitional arrangements (also now repealed) were previously set out in Schedule 6A which provided that Part 3A continued to apply to approved Part 3A projects, including modifications to Project Approvals under section 75W of the EP&A Act.

Two modifications to the Project Approval were approved under section 75W of the EP&A Act, including MP 09_0090 MOD 1 (approved 9 November 2012) for the construction of a storage shed and a 2 megalitre water tank, and MP 09_0090 MOD 2 (approved 4 July 2016) for the installation of a heat exchanger and cooling tower.

On 1 March 2018, the transitional Part 3A modification provisions were removed from the EP&A Act and these former Part 3A provisions no longer apply. Therefore, future modifications to the Project Approval MP 09_0090 would be assessed under Part 4 of the EP&A Act.

The Project Approval (as modified), the EA, the Statement of Commitments in the EA, the environmental assessments (and associated consent conditions) accompanying the modification applications, and the other plans required under the Project Approval, act as the guiding documents for the development of this EMS and for environmental planning compliance at the site.

In addition to Condition 1, Schedule 4 of the Project Approval, which requires preparation and implementation of an EMS, there are several conditions relating to operations at the site which are referenced in this EMS. In accordance with the conditions of approval, during operations Orica shall:

- Implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction and/or operation of the Project;
- Ensure that all plant and equipment used on the Project Site is maintained in a proper and efficient condition; and operated in a proper and efficient manner;
- Have in place an Emergency Plan and a Safety Management System;
- Have in place a Road Transport Protocol for heavy vehicles including a Traffic Management Plan, and a Driver Code of Conduct;
- Ensure that noise generated from the project does not exceed 35 dB(A) $L_{Aeq(15 \text{ minute})}$ at the nearest residential receptor at any time;
- Implement the recommendations of the “Bushfire Threat Assessment” included in the EA and measures outlined in the Submissions Report;
- Comply with Section 120 of the *Protection of the Environment Operations Act 1997*;

- Ensure that all chemicals, fuels and oils associated with the Project are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund;
- Have in place a Soil and Water Management Plan, including a Stormwater Management Plan and an Erosion and Sediment Control Plan;
- Ensure that lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network; and
- Ensure that all waste generated by the Project during construction and operation is classified in accordance with the Environmental Protection Authority (EPA) Waste Classification Guidelines 2014, and if required, disposed of to a facility via a transporter that may lawfully accept the waste.

Appendix B lists the appropriate controls, safeguards and compliance actions to ensure compliance with these conditions.

2.2.2 Protection of the Environment Operations Act 1997 (POEO Act)

Under the POEO Act, Orica holds an Environmental Protection Licence (EPL) 4121 for the Technical Centre. As such all works and activities at the ANE Facility must be carried out in accordance with the EPL.

EPL 4121 authorises the carrying out of the following scheduled activities at the scales specified for the Orica Technical Centre:

- *Chemical production*
 - *Dangerous goods production (capacity to produce greater than 25000 T per year); and*
 - *Explosives production (capacity to produce 0 - 2000 T per year).*

Specifically, condition L6.1 of the licence notes that the licensee shall not produce more than 250,000 tonnes per annum of Ammonium Nitrate Emulsion (ANE) at the premises.

The EPL also applies to the ancillary activity relating to the Sewage Treatment System at the Technical Centre. Condition L2.1 allows up to 16,800 litres per day of treated effluent to be applied to the utilisation area, which comprises one hectare of office area lawns and gardens .

Condition L3 defines the wastes that may be received at the premises and specifies the waste limits that apply. Only 8 tonnes of each of the waste types are permitted on the premises at any one time and must be stored in accordance with any SafeWork specifications. Permitted wastes are defined as:

- Off-specification explosives and ordinance originally manufactured by the licensee – off-specification products returned to the licensee for research and development, testing and/or reprocessing;
- Waste: all other types – Off-specification products or explosive materials sent to the licensee for research and development, testing and/or reprocessing.

Condition P1.3, L4 and M4 of the EPL also details specific conditions relating to the noise limits for production:

- Noise generated from the premises must not exceed 35dB(A) $L_{Aeq,(15\text{ minutes})}$ at receptors R1-R21 referred to in “*Environmental Assessment, Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technical Centre, Richmond Vale, NSW*” 2009, at any time during construction and operations; and
- Noise limits do not apply under certain meteorological conditions;
- Noise monitoring must be undertaken following the receipt of a noise complaint if required by the EPA, and noise monitoring equipment must be located as specified.

In accordance with EPL 4121 Orica shall:

- Maintain in a proper and efficient condition, and operate in a proper and efficient manner, plant and equipment installed at, or used at, the site;

- Ensure that the quantity of effluent/solids applied to the utilisation area does not exceed the capacity of the area to effectively utilise the effluent/ solids;
- Monitor concentration of pollutants discharged to the utilisation area;
- Ensure that all licensed activities are carried out in a competent manner including the:
 - Processing, handling, movement and storage of materials and substances used to carry out the activity, and
 - The treatment, storage, processing, reprocessing, transport, and disposal of waste generated by the activity.
- Ensure that all chemicals, fuels and oils stored at the premises are contained within appropriately designed bunded areas complying with Australian Standards, having impervious flooring, and a minimum capacity of 110% of the largest container stored therein;
- Not cause or permit the emission of offensive odour beyond the boundary of the site in accordance with section 129 of the POEO Act;
- Maintain the premises and undertake operations in a manner that minimises or prevents the emission of dust from the premises;
- Ensure trucks entering and leaving the premises have their loads covered at all times except during loading and unloading;
- Treat all sewage inflows to the sewage treatment plant with a minimum ultraviolet disinfection rate of 30 milliwatts-second per square metre prior to discharge;
- Ensure spray from effluent application does not drift beyond the boundary;
- Undertake effluent application in a manner that does not cause surface runoff;
- Deny public access to the effluent utilisation area during effluent application and until the effluent application area has dried;
- Install adequate notices warning the public not to drink or otherwise use the treated effluent on the site;
- Ensure the wastewater management system is inspected and assessed by a wastewater technician each quarter and record details of such inspections (including date and time of the inspection, and details of any follow up actions required and completed);
- Keep a legible record of all complaints in relation to pollution arising from any activity to which the licence applies;
- Prepare and submit Annual Returns (including certifying the Statement of Compliance and signing the Monitoring and Complaints Summary);
- Prepare and submit an Annual Performance Report for the Stormceptre Discharge with each Annual Return (which will include an assessment of stormwater discharge quality monitoring data obtained during the reporting year); and
- Notify the EPA of environmental harm.

2.2.3 Explosives Act 2003 & Explosives Regulation 2013

Under the *Explosives Act 2003* and the *Explosives Regulation 2013*, a person must not handle Security Sensitive Dangerous Substances (SSDSs) unless authorised to do so by a SafeWork NSW licence. Ammonium Nitrate is a listed SSDS. Orica has a SafeWork NSW licence to Manufacture, Supply, Possess, Store, and Export, and authorises its use of Ammonium Nitrate under the Explosives Act. Where required, individuals are also licensed to handle SSAN (Security Sensitive Ammonium Nitrate) in accordance with the Act.

2.2.4 Work Health and Safety Act 2011 and Work Health and Safety Regulation 2017

The *Work Health and Safety Act 2011* (WHS Act) and *Work Health and Safety Regulation 2017* (WHS Regulation) set out the obligations for operators of Major Hazard Facilities. The WHS Regulation requires activities to reduce the risk of a major accident and to minimise the consequences in the event of a major accident. Orica's Richmond Vale site has been classified as a Major Hazard Facility and is required to adhere to the requirements of the WHS Regulation, including registration with the SafeWork NSW Major Hazard Team and notification where applicable.

2.2.5 Cessnock Local Environmental Plan 2011

The ANE Facility is located within the Cessnock Local Government Area (LGA). Under the *Cessnock Local Environmental Plan 2011* (Cessnock LEP) the land on which the ANE Facility is located is zoned as RU2 Rural Landscape. However, Clause 10, Schedule 1 of the Cessnock LEP provides that development for the purposes of a technical centre and explosives research and production facility is permitted with development consent on this land. Current activities at the site are consistent with the activity description in the Cessnock LEP permissible for that land.

2.3 Objectives and Targets

This EMS incorporates site-specific environmental objectives and targets consistent with Orica's SH&E Policy set out in Section 1.3 of this EMS. The objectives and targets will help ensure that operations at the ANE Facility and its associated lands are undertaken in a safe manner so as to protect people, to protect the amenity and values of the local environment.

The objectives have been determined based on:

- Orica's SH&E policy;
- The site-specific environmental aspects and potential risks at the site; and
- The applicable legislation to which Orica subscribes at the site.

The objectives set the site's environmental priorities and desired environmental performance. The targets are a measure that the objectives are being achieved and that the site is being properly managed to deliver optimum performance and environmental outcomes.

The objectives and targets cover both long and short-term aspects. They were set prior to the commencement of operations at the ANE Facility and have been reviewed following start-up and during operations. The site objectives and targets are shown at Table 2.

Table 2 Objectives and Targets

Objective	Target
To maintain a safe and productive worksite.	No major accidents recorded at the ANE Facility or its associated lands.
	All incidents and near misses captured and investigated.
	Improvement plans are implemented for corrective actions associated with all near-misses.
	All staff and contractors have a thorough understanding of their environmental responsibilities. Contractors subject to 12 monthly inductions.
To prevent off-site impact to the environment from the operations.	No failures of on-site segregation and containment of dirty or contaminated water. Constantly monitor all bund levels and maintain bund levels at minimum levels at all times. Optimise plant by recycling all possible bund water and stormwater runoff into process.
	No detection of off-site odour or air emissions.
	No localised flooding events at the ANE Facility.

Objective	Target
To prevent off-site environmental events affecting the site operations such as storms, bushfires.	Fire Safety Study fully implemented. Document regular inspections of surrounding bush and actions taken to manage hazard reduction.
To prevent injuries to people or wildlife from snakes, avifauna or other wildlife entering the ANE Facility.	All workers understand the ANE Facility site requirements to be implemented in the event that snakes or other wildlife are spotted within the plant area.
To be recognised as a “Good Neighbour” with the local community.	No community complaints regarding the ANE Facility operations impact to amenity.
	No complaints or enquiries regarding driver behaviour, parking, speeding or noise.
To operate a secure worksite.	Any unauthorised access is identified quickly preventing damage and/or injury.
To have excellent waste management practices in place.	Minimise production of waste, and reduction of all waste to landfill.
To achieve compliance with all environmental legislation applicable at the ANE Facility and its associated lands.	No breaches of Environment Protection Licence conditions or other relevant environmental legislation for the ANE Facility.

It is expected that these objectives and targets will be reviewed at least every two years to ensure they are actively achieving best practice in environmental management, and are still relevant to local conditions and the legislative framework. New objectives may be determined and new targets set over time.

Objectives and targets will be progressively achieved through the implementation of the various management plans, procedures and measures referred to in this EMS.

The implementation of these plans will ensure effective environmental performance and mitigate environmental impacts. Implementation of the plans is the responsibility of the Facility Manager.

3.0 Implementation

3.1 Roles and Responsibilities

Environmental management at the ANE Facility is the responsibility of all employees and contractors, with the Facility Manager having overall responsibility for environmental management at the Facility, and overall responsibility for this EMS.

Environmental roles and responsibilities for site personnel are shown in Table 3. In addition, the management plans and procedures outline specific roles and responsibility for key personnel.

Roles and environmental responsibilities are communicated to all staff and contractors at the ANE Facility during site induction, so that all personnel understand their role in environmental performance at the site, and are aware of the key environmental management roles.

Table 3 Roles and Responsibilities

Role	Environmental Responsibility
Kurri ANE Facility Manager	Has overall responsibility for environmental management at the ANE Facility and its associated lands, and for this EMS.
	Provides the authority for environmental management in accordance with Orica's SH&E Policy.
	Provides the authority for resourcing implementation of this EMS, associated EMPs, monitoring and audits.
	Maintains ongoing communication with the Site Facility Capability Specialist to ensure any potential environmental issues are brought to the manager's timely attention, and to ensure the Site Facility Capability Specialist is aware of any environmental obligations which may affect the operations.
	Provides the principal point of contact in relation to environmental performance of the project and with the EPA.
	Liaises with regulatory authorities on matters relating to the Project Approval and conditions.
	Coordinates ongoing environmental monitoring as required.
	Ensures that environmental documentation as required under the Project Approval is provided on the website.
	Investigates incidents and their causes, and designs and implements suitable solutions.
	Coordinates the notification of regulatory authorities if notification is required.
	Reviews the Environmental Aspects Register at least every two years to ensure that the potential environmental aspects of the operations are current, and are adequately understood and managed.
	Ensures that the objectives and targets in the EMS, and are being met, and reviews and amending these targets at least every two years.
	Conducts two-yearly (biennial) audits of the Management Plans referred to in this EMS and keeps auditable records of the results.
	Ensures that contractors at the ANE Facility operate under contracts that oblige them to work within the scope of the EMS, management plans and procedures.
	Ensures all employees and contractors attend a site induction (which includes environmental awareness component) prior to commencing work at the ANE Facility.
Employees	Ensures their compliance with the EMS, management plans and procedures as applicable to their duties.

Role	Environmental Responsibility
	Attends site induction (which includes environmental awareness and emergency procedures) prior to commencing work at the ANE Facility.
	Reports any environmental incident, or near miss, that occurs at the ANE Facility or its associated lands to their immediate supervisor.
Contractors	Attends site induction (which includes environmental awareness and emergency procedures) prior to commencing work at the ANE Facility.
	Reports any environmental incident, or near miss, that occurs at the ANE Facility or its associated lands to their immediate supervisor.

3.2 Training, Awareness and Competence

It is Orica policy that all personnel (including contractors) attend a site induction held at the ANE Facility prior to employment, or on commencement of activities.

An example of the ANE Plant Induction is included at Appendix C although it is noted that the induction is reviewed and updated on a regular basis. It is the responsibility of the Facility Manager to ensure that all employees and contractors receive appropriate induction prior to starting work.

The site induction for the Orica ANE Facility outlines Orica's environmental policies and responsibilities and covers the SH&E requirements of working for Orica. The site induction includes an environmental awareness component so that all personnel understand their role and responsibilities in environmental performance at the ANE Facility.

As required, specific training or awareness programs would be conducted for workers with particular environmental duties or for those whose work could cause potential environmental impacts. Particular environmental training needs would be identified by the Orica SH&E Team through "Change Awareness", and specific training programs developed as a result.

Competency will be demonstrated and managed through a short quiz during the induction/training program. The Contractor's Site Induction Assessment Form is provided at Appendix D. The employee or contractor will not be permitted to work at the ANE Facility if their level of competency is doubted by the trainer or Facility Manager.

The effectiveness of emergency training is assessed as part of the internal audits of the Emergency Plans and SH&E Procedures for training, as well as during a debrief following emergency exercises.

Other Orica SH&E programs are in place and have been implemented at the ANE Facility and its associated lands. These programs and events provide ongoing learning and awareness opportunities to help people anticipate potential incidents and to encourage personal action to minimise risk.

Programs include:

- Job Safety and Environment Risk Analysis (JSERA) Program;
- Job Start;
- Periodic Toolbox Talk Meetings;
- Monthly Safety Meetings, and
- Behavioural Safety Program.

A summary of training to occur, timing and who is responsible is provided at Appendix E.

3.3 Communication

3.3.1 Internal Communication

Orica Procedure MP-SG-014 "Communication Process" describes the requirement for internal SH&E communication and consultation between functions.

Both the ANE Facility Manager and the Orica SH&E team are responsible for maintaining communications to ensure the commitments identified in this EMS are satisfied, potential environmental issues are discussed, and to ensure ongoing awareness of any environmental obligations which may affect the operations.

Orica's environmental policy and environmental awareness will be communicated to all staff and contractors through the site induction and ongoing training programs.

Any disputes that may arise in relation to operations at the ANE Facility and the measures outlined within this EMS will be managed by the Facility Manager. Orica procedures are in place to respond to disputes and ensure ongoing safety, health and environmental performance.

3.3.2 External Communication

3.3.2.1 General Enquiries, Information & Visitors

Orica Procedure MP-SG-013 "Visitors to Site" defines the requirements for management of the health, safety and welfare of visitors to site. In keeping with this procedure any general enquiries received from the public during business hours will be directed through to the Technical Centre switchboard. The call will then be directed to the appropriate business function (i.e. the ANE Facility or the Technical Centre site). If the call relates to an incident within the Technical Centre site it will be directed to the appropriate business function by the operator or directed to the Emergency Response Service (ERS) as appropriate.

When the call is made outside of office hours, the caller will receive a message directing them to Orica's ERS phone number (1800 033 111) if the call relates to an emergency. If the call is a general enquiry, the caller will be asked to leave a message with their contact information, and their call will be returned the next working day by a representative of the relevant business function.

Orica's ERS is staffed 24/7 by personnel dedicated to the effective management of emergencies. The types of incidents that can be classified as emergencies are:

- Human or animal exposures;
- Spills or leaks;
- Transport related incidents;
- Security concerns (i.e. bomb threats or suspicious packages; kidnapping or extortion threats; robbery, theft or unlawful entry); and
- Site incidents (i.e. fire; fatality or injury on site; alarms; noise or odour complaints; property damage affecting safety).

The contact numbers for the site are as listed below:

- Orica Technical Centre enquiry line - (02) 4939 5200 or 1300 665 719; and
- ERS - 1800 033 111.

These phone numbers are listed in the White Pages and on the Orica website, advertised via signage at the Orica Richmond Vale site entrance on George Booth Drive, and noted on relevant vehicles in the case of the ERS number in accordance with the Road Transport Protocol.

3.3.2.2 Complaints

In accordance with EPL 4121 (Condition M6), Orica must record all pollution complaints, retain the record for at least four years after the complaint was made, and provide records to the EPA if requested. As per Condition M4.1, following the receipt of a noise complaint and if required by the EPA, Orica will undertake noise monitoring to determine compliance with EPL noise limits.

In accordance with EPL 4121 (Condition M7), Orica must also:

...operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence... [Orica] must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

As the ANE Facility is approved to operate 24 hours 7 days per week, Orica has established a 24 hour Community Enquiry line for the operation of the project as outlined above in accordance with the site EPL. A log of all complaints will be maintained, with complaints relating to the ANE facility or the associated traffic movements directed to the ANE Facility Manager as soon as possible.

All phone complaints will be followed up on the next working day or as soon as is practicable. Where appropriate and / or requested, the complainant will be contacted to discuss the complaint.

Orica will maintain a register to record details of all enquiries received and actions undertaken in response. When the complaint relates to an incident that is directed to the ERS there will be a full report relating to the management and communication of the incident. Incidents which require investigation and corrective action will be entered into the Orica Safety Management Database (ENABLON) and assigned to an investigation manager. Orica will provide the EPA with a summary of complaints received as part of the Annual Return prepared in accordance with the site EPL.

3.3.2.3 ANE Facility Website

In accordance with the Project Approval (Schedule 4, Condition 5):

From the end of 2010, the Proponent shall provide regular reporting on the environmental performance of the Project on its website, including ensuring the following information is publicly available on its website:

- a. A copy of all current statutory approvals;*
- b. A copy of the current environmental management strategy and associated plans and programs;*
- c. A copy of any Annual Reports (over the last 5 years);*
- d. A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit;*
- e. Any other matter required by the Director-General.*

In addition, section 66(6) of the POEO Act requires licence holders to publish monitoring data that relates to pollution on the licence holder's website within 14 days of obtaining monitoring data. The results of monitoring conducted at Point 2 (located at the overflow from the water treatment system) are published on the Orica website in accordance with these requirements.

The Facility Manager is responsible for providing the environmental content to ensure compliance with the placement of relevant information on the website and for ensuring the content as required in Condition 5 is publicly available on the website:

<http://www.orica.com/Sustainability/Environmental-Monitoring-Data/Kurri-Kurri>.

3.3.2.4 Environmental Incidents and Notification

In accordance with EPL 4121 (Clause R2), Orica:

- *or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.*

Note Section 148(8) of POEO Act (as amended) *Notification of Pollution Incidents with Actual or Potential to cause Material Harm* became effective from 6 February 2012. Pollution incidents must be reported to the "Relevant Authority", 24 hr hotlines:

- EPA;
- Local Authority (Cessnock City Council);

- Ministry of Health;
- SafeWork NSW; and
- Fire & Rescue NSW (EPA extending to Police & Ambulance).

Under Clause R2.1 of EPL 4121, notifications will be made by telephoning the Environment Line service on 131 555.

In accordance with the Project Approval (Schedule 4, Condition 3):

- *The Proponent shall notify the Director-General and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.*

If an incident occurs, employees and contractors must notify their immediate supervisor, who will contact the SH&E team representative responsible for environmental management at the ANE Facility and/or Safety Officer (as applicable). The SH&E team representative will be responsible for notifying the EPA and the DPIE. In the absence of the SH&E team representative, the Facility Manager will be responsible for notification to the EPA and DPIE.

A summary of site notifications, when they are specified and who is responsible, is provided at Appendix F.

3.3.2.5 External Agency

In addition to the website, relevant agencies, such as the EPA, will be kept informed of the environmental performance of the facility through Annual Returns, notification and reporting processes as required under EPL 4121 and the POEO Act.

The DPIE would be kept informed through reporting obligations identified in the Project Approval.

Other agencies such as Cessnock City Council would be consulted as required.

A summary of reporting to be undertaken, timing and the person responsible is provided at Appendix G.

3.3.2.6 Community Consultation and Support

Orica's Technical Centre site currently maintains a relationship with the local community and Council through sponsorship of various community and sporting groups. In addition the Orica Procedure SHE-GBL-PRO-COM-001 "Community Relations Programs" describes requirements for provision of information and involvement of the community in SH&E issues to improve the relationship between the company and the community including SH&E performance and other related information.

The Technical Centre site will implement a Community Consultation Strategy which will detail the methods used to inform the community and relevant stakeholders about the operation and its environmental performance, and the procedures to be implemented to manage community complaints and enquiries.

3.4 EMS Documentation

EMS documentation includes this EMS and supporting Environmental Management Plans (EMPs) and procedures cited in this EMS. All personnel must comply with this EMS and supporting documents in so far as they are applicable.

The procedures and site-specific EMPs are in place to guide operations at the ANE Facility. Current supporting site-specific plans include (though may not be limited to):

- An Emergency Plan;
- A Safety Management System;
- A Road Transport Protocol for heavy vehicles, including a Traffic Management Plan, and a Driver Code of Conduct;

- A Vegetation Management Plan for the ANE Facility lands, its surrounds and the offset area;
- A Soil and Water Management Plan, including: a Stormwater Management Plan, and an Erosion and Sediment Control Plan; and
- A Fire Safety Study.

Additional EMPs may be prepared for the site over time, if the need arises. Additional plans may be developed to address management of a particular issue; to achieve the objectives and targets; or to implement improvements where they have been identified.

In addition, if an incident occurs, the SH&E team may design and implement site-specific solutions and/or procedures following incident investigation through Enablon.

3.5 Document Control

The ANE Facility Manager is responsible for maintaining and updating this EMS and the EMPs. Changes to the EMS and EMPs may arise from a corrective action request, a management review or changes to site works. Any changes to the documents must be clearly marked on a new draft document (so they can be readily identified) and comments sought from the ANE Facility Manager. The process of seeking comments and approval from the ANE Facility Manager is to ensure the Facility Manager's awareness of any changes, and to ensure possible impact to other areas of the operation have been considered.

Once changes are approved by the ANE Facility Manager, the updated document is issued for use on site. It will be the responsibility of the ANE Facility Manager to ensure that the changes are communicated to employees and contractors as applicable.

The ANE Facility Manager is responsible for keeping a copy of every revision of the EMS and EMPs issued for use at the site. When a new revision is issued, ANE Facility Manager is responsible for recalling and replacing the previous edition on the local network directory or wherever such documents would be filed for access at the site.

If they are updated, some documents, such as the Emergency Plan, will require submission to and the subsequent approval of government authorities. These reporting requirements are set out in the summary of reporting at Appendix G.

3.6 Emergency Preparedness

Orica Group Procedure "SHES Emergency Management" describes the site requirements for the development of an effective emergency response system. An Emergency Plan has been prepared for the ANE Facility.

The ANE Facility Manager shall ensure the Emergency Plan for the ANE Facility is maintained and includes adequate arrangements to protect the employees and contractors in the event of foreseeable emergency conditions. All employees and contractors will be made aware of the emergency procedures through attendance at the site induction. In addition Orica may conduct simulated emergency exercises at any time, without warning. All employees and contractors shall ensure they follow all requirements in the event of an emergency alarm. Anyone becoming aware of an emergency or potential emergency at the ANE Facility, must telephone the ANE Facility Manager in the first instance. ANE Facility emergency contact details are:

- David Horne, Orica ANE Senior Manufacturing Supervisor, ph: 0427 004 693;
- Orica ERS, ph: 1800 033 111; and
- Orica Kurri Kurri Technical Centre, switch ph: 02 4939 5200.

In addition, the organisations shown at Table 4 should be informed in the event of an emergency or infrastructure failure:

Table 4 Emergency Contacts

Organisation	Phone Number
Police, Fire, Ambulance	000
John Hunter Hospital	(02) 4921 3000
NSW EPA	131 555
Local Emergency Management Officer	(02) 4993 4300
SafeWork NSW	13 10 50

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4.0 Checking and Corrective Action

4.1 Monitoring and Evaluation

Routine inspections of the ANE Facility site operations will be undertaken by the ANE Facility Manager. In addition, there will be regular checks to determine if the requirements set out in the EMPs are being implemented. Such checks will be carried out as required or in accordance with the EPL. All inspections are recorded on the shift pre-start and monthly housekeeping inspection checklists provided at Appendix H.

The following inspections are carried out by the site team:

Table 5 Routine Inspections

Inspection/Check	Frequency
Housekeeping Checklist (refer to <i>Shift Pre Start and Housekeeping Checklist</i> and <i>Monthly Housekeeping Audit Inspection Checklist</i>)	Daily / Monthly
Envirocycle Maintenance (refer to <i>Envirocycle Maintenance Checklist</i>)	Monthly
Stormceptor Maintenance (refer to <i>Stormceptor Maintenance Checklist</i>)	Monthly
Bushfire Prevention Maintenance (<i>Bush Fire Precautions Checklist - Red Book</i>)	Monthly
Self-Bunded Tank– Maintenance (<i>Self Bunded Tank Maintenance Checklist</i>)	Monthly

The checklists of monthly maintenance tasks undertaken during monthly inspections are provided at Appendix H.

In addition, the EMPs will be formally audited on a biennial basis by the Technical Centre Site Manager with the SH&E team representative. Auditing will be used as the main checking mechanism to ensure that:

- The required tasks are being satisfactorily completed; and
- The tasks are achieving the desired environmental outcomes.

A compilation of monitoring tasks to be undertaken at the ANE Facility is provided at Appendix I. The monitoring tasks are grouped into the following categories to assist with onsite management:

- Routine site inspections;
- Periodic maintenance tasks;
- Monitoring and maintenance of the conservation area; and
- Monitoring related to specific activities:
 - Truck driving;
 - Bushfire hazard reduction; and
 - Noise monitoring.

4.2 Non-conformance and Corrective and Preventative Action

Orica Group Procedure “SHES Event Management” describes the requirements and response to any non-compliance.

Non-conformances may arise from routine inspections, audits or monitoring, or from an external complaint or a site incident. An environmental non-conformance can be defined as:

- Any inspection/test result that does not meet the acceptance criteria specified in the Project Approval or EPL 4121;
- Any notice or non-compliance issued by the EPA or any other regulatory authority with environmental jurisdiction;
- Any non-compliance with legislation, approvals or licences; or
- Any non-compliance with identified site-specific objectives and targets.

Should a non-conformance be identified, corrective and/or preventative actions are to be implemented in accordance with the relevant Orica procedures for incident reporting and investigation. They comprise:

- All non-conformances are to be classified as environmental incidents and documented;
- Investigate the cause of the potential non-conformance including stopping the activity if applicable;
- Identify potential corrective and/or preventative actions;
- Implement mitigation measures where applicable; and
- Provide feedback to employees and contractor personnel, where relevant.

Where improvements are identified, a plan for implementing those will be developed.

4.3 Records

Appropriate records are required to be maintained and should include records of:

- Any mandatory or voluntary Audits;
- Document revisions;
- Training records;
- Inspection and Monitoring records; and
- Complaints.

The Facility Manager is responsible for ensuring that the appropriate records required to maintain this EMS are created and stored appropriately. While the EMS documentation is in the format of ISO 14001; the format of the EMPs and other documents to support the EMS must ensure that the documentation is:

- Legible;
- Able to be readily retrieved;
- Compliant with all the records required if ISO 14001:2015 is to be implemented at the Facility; and
- Auditable by external parties.

All copies of final records should be lodged with Orica’s document control, and must be available for external audits.

4.4 Audit

4.4.1 Internal Audits

The EMS shall be audited on two-yearly (biennial) basis. Biennial audits will also be conducted of the site-specific Management Plans referred to in this EMS.

Where appropriate and/or required, internal audits may be undertaken by a suitably qualified external auditor.

Internal audits must assess the implementation of all documentation associated with the EMS and their effectiveness. The results of the audits must be recorded and communicated to the ANE Facility Manager, together with suggested corrective actions that may be required. The ANE Facility Manager will need to agree to any corrective or preventive actions which may be required, as these may need to be reflected in contractual conditions.

All auditing records will be maintained in Enablon. A formal audit report must be prepared for each audit undertaken.

Orica Group Procedure "SHES Assurance" describes requirements for the planning, administration, reporting, corrective action and follow-up of internal SH&E audits.

4.4.2 Independent Audits

The following independent audits will also be undertaken in accordance with the Project Approval. The Orica Facility Manager will be responsible for arranging the audits. The requirements of the audits as set out in the Project Approval are outlined below:

- **Environmental Audit of the Project:** In accordance with the Project Approval (Schedule 4, Condition 4), within two years of the commencement of operations of the ANE Facility, and every three years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project.
- **Traffic Audit:** In accordance with Project Approval (Schedule 3, Condition 11), within six months of the commencement of operation of the ANE Facility, and every three years thereafter, unless the Director-General directs otherwise, the Proponent shall commission a suitably qualified person, whose appointment has been approved by the Director-General, to conduct an Independent Traffic Audit of the development.
- **Hazard Audit:** In accordance with Project Approval (Schedule 3, Condition 5), twelve months after the commencement of operations and every three years thereafter, or at such intervals as the Director-General may agree, the Proponent shall carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Director-General. The audit shall be carried out by a qualified person or team independent of the overall site approved by the Director-General.

A summary of auditing to be undertaken, timing and the person responsible is provided at Appendix J.

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5.0 Review

This EMS will be reviewed every two years or in response to major operational changes, to determine the effectiveness of any corrective actions identified in the various audits. The review process will enable changes in environmental legislation and guidelines, and changes in site management to be reflected in the EMS.

The reviews should aim to review the continuing suitability and effectiveness of the EMS, and should at least include the following considerations:

- Are the EMS objectives and targets adequate? Are they still the key priorities? They may need to be revised to reflect changing conditions and information.
- Are the environmental outcomes at the site acceptable?
- Is the Environmental Aspects Register still relevant? Are there further environmental aspects that need to be considered? Are the mitigating measures effective?
- Is the site infrastructure functioning efficiently to allow the achievement of environmental goals?
- How could the EMS be improved?

The review will be led by the ANE Facility Manager.

If it is determined that the EMS is to be revised following the review, the revised EMS should be made available at the ANE Facility and communicated to employees and contractors, within four months following the review.

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6.0 References

AECOM Australia Pty Ltd, November 2019, Operation Soil and Water Management Plan for Ammonium Nitrate Emulsion Production Facility.

Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

Orica Mining Services, Revision 11, 02/12/2016, Kurri Kurri Emergency Plan.

Orica Mining Services, November 2011, Orica Kurri Kurri Safety Management System.

Orica Australia Pty Ltd, May 2019, Richmond Vale ANE Production Facility: Heavy Vehicle Road Transport Protocol – Operations Rev D (Operational RTP).

Project Approval 09_0090 (in accordance with Section 75J of the *Environmental Planning and Assessment Act, 1979*), issued 26 July 2010 by the Minister for Planning.

Project Approval 09_0090 MOD 1 (in accordance with Section 75W of the *Environmental Planning and Assessment Act, 1979*), issued 9 November 2012 by the delegate of the Minister for Planning.

Project Approval 09_0090 MOD 2 (in accordance with Section 75W of the *Environmental Planning and Assessment Act, 1979*), issued 4 July 2016 by the delegate of the Minister for Planning.

Sherpa Consulting, Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011.

Sherpa Consulting, Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011.

Umwelt (Australia) Pty Limited, December 2009, Environmental Assessment Proposed Ammonium Nitrate Emulsion (ANE) Production Facility, and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW.

Umwelt (Australia) Pty Limited, September 2010, Environmental Management Strategy for the Construction of Orica's Ammonium Nitrate Emulsion (ANE) Production Facility, Richmond Vale, NSW.

Umwelt (Australia) Pty Limited, 2018, Biodiversity Offset Area Vegetation Management Plan Rev 3.

Umwelt (Australia) Pty Limited, March 2012, Response to Submissions.

Umwelt (Australia) Pty Limited, October 2012, Section 75W Modification application, MOD 1 Environmental Assessment - Orica Australia Pty Limited, Ammonium Nitrate Emulsion Production Facility, Richmond Vale.

Umwelt (Australia) Pty Limited, April 2016, Section 75W Modification application, MOD 2 Environmental Assessment - Orica Australia Pty Limited, Ammonium Nitrate Emulsion Production Facility, Richmond Vale.

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Appendix A

Project Approval

Appendix A Project Approval

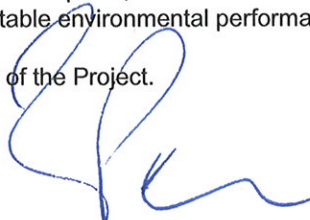
Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 4.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.



Richard Pearson
Deputy Director-General

Sydney

26th July

2010

SCHEDULE 1

Application Number:	09_0090
Proponent:	Orica Australia Pty Ltd
Approval Authority:	Minister for Planning
Land:	George Booth Drive, Lot 2 DP 809377, Richmond Vale NSW
Project:	Orica Ammonium Nitrate Emulsion Project

TABLE OF CONTENTS

DEFINITIONS	1
ADMINISTRATIVE CONDITIONS	2
Obligation to Minimise Harm to the Environment	2
Terms of Approval	2
Limit on Approval	2
Surrender of Existing Development Consents	2
Submission of Documentation	2
Structural Adequacy	2
Protection of Public Infrastructure	2
Operation of Plant and Equipment	3
SPECIFIC ENVIRONMENTAL CONDITIONS	3
Hazards	3
Traffic and Transport	5
Flora and Fauna	6
Air Quality	7
Noise	7
Soil and Water	7
Visual	8
Waste	8
Aboriginal Heritage	8
ENVIRONMENTAL MANAGEMENT AND MONITORING	9
Environmental Management Strategy	9
Environmental Reporting	9
Auditing	10
Access to Information	10
APPENDIX A: SITE PLANS	11
APPENDIX B: BIODIVERSITY OFFSET STRATEGY	13

DEFINITIONS

Ammonium nitrate emulsion product	Ammonium nitrate emulsion (ANE) which conforms to the UN3375 classification. ANE is an explosive precursor which is sensitised to become an explosive only at the point of use i.e. the mine site.
ANE	Ammonium Nitrate Emulsion
BCA	Building Code of Australia
Council	Cessnock City Council
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
EA	Environmental Assessment titled <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> and dated October 2009
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence
Minister	Minister for Planning, or delegate
Project	The development as described in the EA titled " <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> ", Prepared by Umwelt Australia and dated December 2009.
Proponent	Orica Australia Pty Ltd, or its successors in title
Reasonable and Feasible	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build
Project Site	The land referred to in Schedule 1
Statement of Commitments Documents	Statement of Commitments prepared by Umwelt within the EA Any report, plan, management plan, study or strategy required by this project approval
Submissions Report	Submissions Report titled <i>Proposed Ammonium Nitrate Emulsion (ANE) Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW Response to Submissions</i> and dated March 2010
tpa	tonnes per annum

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction and/or operation of the Project.

Terms of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
 - a) EA;
 - b) statement of commitments
 - c) Submissions Report; and
 - d) conditions of this approval.
3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and
 - b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

Limits on Approval

5. The Proponent shall not produce more than 250,000 tpa of ammonium nitrate emulsion product at the Project site.

Surrender of Existing Development Consents

6. Within 12 months of this approval, the Proponent shall surrender all existing development consents and project approvals for the site, apart from this project approval, in accordance with Clause 97 of the EP&A Regulation.

Submission of Documentation

7. With the approval of the Director-General, the Proponent may submit any plan, study or document required by this approval on a progressive basis.

Note: The conditions of this approval require certain documents to be prepared for the Project. They also require these documents to be reviewed and audited on a regular basis to ensure they remain effective. However, in some instances, it will not be necessary or practicable to prepare these documents for the whole Project at any one time; particularly as these documents are intended to be dynamic and improved over time. Consequently, the documents may be prepared and implemented on a progressive basis. In doing this however, the Proponent will need to demonstrate that it has suitable documents in place to manage the existing operations of the Project Site.

Structural Adequacy

8. The Proponent shall ensure that all new buildings and structures on the Project Site are constructed in accordance with the relevant requirements of the Building Code of Australia.

Notes:

- Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project.

Protection of Public Infrastructure

9. The Proponent shall:
 - a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Project; and
 - b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Project.

10. Prior to commencement of construction, the Proponent shall prepare a dilapidation report of the public infrastructure in the vicinity of the Project Site (including roads, gutters, footpaths, etc) in consultation with the RTA and submit a copy of this report to the Director-General.
11. Prior to the construction of any utility works, the Proponent shall obtain the relevant approvals from service providers.

Operation of Plant and Equipment

12. The Proponent shall ensure that all plant and equipment used on the Project Site is:
 - a) maintained in a proper and efficient condition; and
 - b) operated in a proper and efficient manner.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

HAZARDS

Pre-construction

1. At least one month prior to the commencement of construction of the proposed project (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Director-General may agree, the Proponent shall prepare and submit for the approval of the Director-General the studies set out under subsections (a) to (d) (the pre-construction studies). Construction, other than of preliminary works, shall not commence until approval has been given by the Director-General and, with respect to the Fire Safety Study, approval has also been given by the Commissioner of the NSW Fire Brigades.
 - a) An update of the Fire Safety Study of the site to include the proposed ANE Facility. This study shall cover the relevant aspects of the Department of Planning's Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines' and the New South Wales Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. The study shall also be submitted for approval, to the NSW Fire Brigades.
 - b) A Hazard and Operability Study for the proposed ANE Facility, chaired by a qualified person, independent of the development, approved by the Director-General prior to the commencement of the study. The study shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'. The study report must be accompanied by a program for the implementation of all recommendations made in the report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.
 - c) A Final Hazard Analysis of the proposed ANE Facility, consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 6, 'Guidelines for Hazard Analysis'.
 - d) A Construction Safety Study for the ANE Facility, consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety Study Guidelines'. If the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.

Pre-commissioning

2. The Proponent shall develop and implement the plans and systems set out under subsections (a) to (b). No later than two months prior to the commencement of commissioning of the project, or within such further period as the Director-General may agree, the Proponent shall submit, for the approval of the Director-General, documentation describing those plans and systems. Commissioning shall not commence until approval has been given by the Director-General.
 - a) An update of the existing Emergency Plan and the emergency procedures to include the ANE Facility. This plan shall include consideration of the safety of all people outside of the facility who may be at risk from the Facility. The plan shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 1, 'Industry Emergency Planning Guidelines'.
 - b) A document setting out a comprehensive Safety Management System, covering all operations and associated transport activities involving hazardous materials associated with the ANE Facility. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on-site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'.

Pre-startup

3. One month prior to the commencement of operation of the project, the Proponent shall submit to the Director-General, a Pre-startup Compliance Report detailing compliance with conditions 1 and 2, including:
 - a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
 - b) actions taken or proposed, to implement recommendations made in the studies/plans/systems; and
 - c) responses to each requirement imposed by the Director-General under condition 6.

Post-startup

4. Three months after the commencement of operation of the ANE Facility, the Proponent shall submit to the Director-General, a Post-startup Compliance report verifying that:

- a) transport routes specified under in the *Technical Note ANE and ANS Transport Hazard Analysis*, rev. 0 prepared by Sherpa and dated 8 Oct 2009, or other routes in accordance with the Traffic Management Plan, are being followed;
- b) the Emergency Plan required under condition 2a) is in place and that at least one emergency exercise has been conducted; and
- c) the Safety Management System required under condition 2b) has been fully implemented and that records required by the system are being kept.

Ongoing

- 5. Twelve months after the commencement of operations of the proposed ANE Facility and every three years thereafter, or at such intervals as the Director-General may agree, the Proponent shall carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Director-General.
 - a) The audits shall be carried out at the Proponent's expense by a qualified person or team, independent of the overall site, approved by the Director-General prior to commencement of each audit. Hazard Audits shall be consistent with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'.
 - b) The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Proponent intends to defer the implementation of a recommendation, reasons must be documented.
- 6. The Proponent shall comply with all reasonable requirements of the Director-General in respect of the implementation of any measures arising from the reports submitted in respect of conditions 1 to 5 inclusive, within such time as the Director-General may agree.

TRANSPORT

Design of Site Access, Internal Roads and Parking

- 7. The Proponent shall ensure that new site access points, internal roads and parking associated with the ANE Facility are designed, constructed and maintained in accordance with the latest versions of the Australian Standards AS 2890.1:2004 and AS 2890.2:2002 or as otherwise agreed by Council.
- 8. Prior to the commencement of operation of the ANE Facility, the Proponent shall prepare and implement a Concept Design Plan of the intersection of Echidna Drive with George Booth Drive. The Plan shall be prepared in consultation with the RTA and to the satisfaction of the Director-General. The Plan shall include:
 - a) Details of the upgrade works to the existing advance intersection warning signage to type GI-207 and reposition the signage further in advance of George Booth Drive / Echidna Drive Intersection;
 - b) Details of improvements of the delineation of the double barrier lines in George Booth Drive on the approaches to Echidna Drive; and
 - c) Install a "Stop" sign at the Echidna Drive intersection.
- 9. The applicant will be required to enter into a Works Authorisation Deed with the RTA for implementation of required road works on George Booth Drive. In this regard the developer is required to submit detailed design plans and all relevant additional information, as may be required in the RTA's Works Authorisation Deed documentation, for each specific change to state road network for the RTA's assessment and final decision concerning the work.

Road Transport Protocol

- 10. Prior to the commencement of construction of the ANE Facility, the Applicant shall prepare and implement a Road Transport Protocol for heavy vehicles, in consultation with the RTA, to the satisfaction of the Director-General. This Protocol shall detail the management of heavy vehicles during both construction and operation of the ANE Facility, and where relevant:
 - a) Define the routes to be used for heavy vehicles; the maximum number of road movements and the haulage hours;
 - b) Include a **Traffic Management Plan**, which incorporates the requirements of the site's existing Traffic Management Protocol and addresses:
 - procedures to ensure that drivers adhere to the designated haulage route as required under this Protocol;
 - measures to achieve a low-frequency, regular trucking schedule during normal business hours rather than a high-frequency, campaign trucking schedule;
 - contingency plans where, for example the designated transport route is disrupted. This shall also address procedures for notifying relevant agencies and affected communities of the required implementation of any such contingency plans;

- details of procedures for receiving and addressing complaints from the community concerning traffic issues associated with haulage from the site; and
 - measures to ensure that the provisions of the Traffic Management Plan are implemented, eg. education of drivers and any contractual agreements with operators of heavy vehicles which service the site;
- c) Include a **Driver Code of Conduct** that addresses:
- driver licencing and training requirements in relation to the transport of dangerous goods;
 - travelling speeds;
 - staggering of truck departures to ensure a regular trucking schedule throughout the day;
 - instructions to drivers not to overtake each other on the haulage route, as far as practicable, and to maintain appropriate distances between vehicles;
 - instructions to drivers to restrict the use of exhaust brakes in accordance with the Submissions Report;
 - instruction to drivers to adhere to the designated haulage route;
 - instruction to drivers to be especially safety conscious and to ensure that traffic regulations are obeyed strictly;
 - driver training in the Code to ensure that all drivers are made aware and to adhere to the Code; and
 - procedures for ensuring compliance with and enforcement of the Code.

Independent Traffic Audit

11. Within 6 months of the commencement of operation of the ANE Facility, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission a suitably qualified person, whose appointment has been approved by the Director-General, to conduct an Independent Traffic Audit of the development. This audit must:
- a) have the verification component of the audit undertaken without prior notice to the Proponent,
 - b) assess the impact of the development on the performance of the road network;
 - c) investigate any incidents involving haulage vehicles from the development;
 - d) assess the effectiveness of the Driver's Code of Conduct; and, if necessary,
 - e) recommend measures to reduce or mitigate any adverse (or potentially adverse) impacts.

Within 1 month of commissioning the audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, with a response to any of the recommendations contained in the audit report.

FLORA AND FAUNA

Offset Strategy

12. Within 6 months of the date of this approval, the Proponent shall implement the offset strategy to the satisfaction of the Director-General. The Proponent shall:
- a) implement the offset strategy described in the Response to Submissions and summarised in Table 3 (shown in Appendix B); and
 - b) make suitable arrangements, in consultation with DECCW, to provide for appropriate long term conservation security for the offset area.

Table 3: Offset Strategy

Offset Area	Minimum Size
Biodiversity Offset Area	31.7 ha

13. The mechanism for securing the Biodiversity Offset Area, referred to in condition 12, shall not be extinguished or altered without the written consent of the Director-General.

Vegetation Management Plan

14. The Proponent shall prepare and implement a Vegetation Management Plan for the project to the satisfaction of the Director-General. The plan must:
- a) be prepared in consultation DECCW, and be approved by the Director-General prior to the commencement of operation of the ANE Facility;
 - b) describe the detailed measures that would be implemented to protect the Biodiversity Offset Areas; and

- c) describe the ongoing management measures that would be undertaken to maintain the Biodiversity Offset Areas for the life of the project.

Vegetation Clearing Protocol

- 15. The Vegetation Clearing Protocol shall:
 - a) clearly identify the location and type of vegetation to be retained and to be removed from the site;
 - b) detail measures that would be implemented for vegetation clearing;
 - c) detail procedures to manage impacts on fauna including translocation of fauna (if appropriate); and
 - d) detail the staging of construction to avoid, where possible, breeding times for key species on site or alternatively minimise impacts during clearing activities.

AIR QUALITY

Mitigation

- 16. The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.
- 17. During construction, the Proponent shall ensure that:
 - a) all trucks entering or leaving the Project Site with loads have their loads covered; and
 - b) trucks associated with the Project do not track dirt onto the public road network.

NOISE

- 18. The Proponent shall ensure that the noise generated from the construction and operation of the project does not exceed 35 dB(A) $L_{Aeq}(15 \text{ minute})$ at the nearest residential receptor at any time.

Notes:

- a) *To determine compliance with the $L_{Aeq}(15 \text{ minute})$ noise level limit in condition 17, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling (rural situations) is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the Department may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
 - b) *The noise emission limits identified above apply under meteorological conditions of:*
 - wind speeds of up to 3 m/s at 10 metres above ground level; and
 - temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.
- 19. The 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. This audit shall:
 - a) be undertaken by a suitably qualified and experienced person during a period in which the ANE Facility is operating at normal capacity;
 - b) assess whether the project is complying with the noise limits in this approval;
 - c) identify what additional measures would be implemented to ensure compliance should any non-compliance be detected and clearly indicate who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General; and
 - d) provide details of any complaints received relating to noise generated by the project, and action taken to respond to those complaints.

Within one month of conducting the Noise Audit, the Proponent shall provide the Director-General and DECCW with a copy of the Noise Audit report.

BUSHFIRE MANAGEMENT

- 20. The Proponent shall implement the recommendations of the 'Bushfire Threat Assessment' included with the EA and also any additional bushfire hazard reduction measures outlined in the Submissions Report.

SOIL AND WATER

Discharges

- 21. The Proponent shall comply with Section 120 of the *Protection of the Environment Operations Act 1997*.

Bunding

22. The Proponent shall ensure that all chemicals, fuels and oils associated with the Project are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. The bund(s) shall be designed and installed in accordance with:
- a) the requirements of all relevant Australian Standards; and
 - b) the DECCW's Storing and Handling Liquids: Environmental Protection, Participants Manual.

Soil and Water Management Plan

23. The Proponent shall prepare and implement a **Soil and Water Management Plan** for the project to the satisfaction of the Director-General. This plan must:
- a) be submitted to the Director-General for approval prior to construction;
 - b) be prepared by a suitably qualified and experienced expert; and
 - c) include, where relevant:
 - a Stormwater Management Plan; and
 - an Erosion and Sediment Control Plan.
24. The Stormwater Management Plan must:
- a) include detailed plans of the stormwater management system for the site, including any rainwater harvesting infrastructure;
 - b) be consistent with the guidelines *Managing Urban Stormwater: Harvesting and Reuse (DECC)*;
 - c) demonstrate that post development flows will not exceed predevelopment flows for a range of ARI from 1 year up to and including the 100 year ARI;
 - d) describe the procedures for the installation, inspection and maintenance of the stormwater system; and
 - e) include a stormwater quality monitoring program for including procedures to be undertaken if any non-compliance is detected.
25. The Erosion and Sediment Control Plan shall be prepared in accordance with *Landcom's 2004 Managing Urban Stormwater: Soils and Construction*.

VISUAL

Lighting

26. The Proponent shall ensure that lighting associated with the Project:
- a) complies with the latest version of *Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting*; and
 - b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

WASTE

Operating Conditions

27. The Proponent shall ensure that all waste generated by the Project during construction and operation is classified in accordance with the DECCW's *Waste Classification Guidelines 2008* and if required, disposed of to a facility that may lawfully accept the waste.

ABORIGINAL HERITAGE

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.

SCHEDULE 4
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to commencement of construction, and:
 - a) provide the strategic context for environmental management of construction and operation of the Project;
 - b) identify the statutory requirements that apply to the Project;
 - c) describe in general how the environmental performance of the Project would be monitored and managed;
 - d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the Project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise in relation to operations at the Project;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies; and
 - e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the Project.

ENVIRONMENTAL REPORTING

Annual Environmental Management Report

2. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an Annual Environmental Management Report (AEMR) for the Project to the Director-General. The report must:
 - a) identify the standards and performance measures for the Project;
 - 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 all monitoring required by this approval and an EPL for the Project;
 - 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 Project; 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.

Incident

3. The Proponent shall notify the Director-General and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

AUDITING

Independent Environmental Audit

4. Within 2 years of the commencement of operations of the ANE Facility, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:
 - a) be conducted by a suitably qualified, experienced, and independent expert whose appointment has been endorsed by the Director-General;
 - b) assess the environmental performance of the Project, and its effects on the surrounding environment;
 - c) assess whether the Project is complying with the relevant standards, performance measures, and statutory requirements;
 - d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - e) recommend measures or actions to improve the environmental performance of the Project, and/or any strategy/plan/program required under this approval.

ACCESS TO INFORMATION

5. From the end of 2010, the Proponent shall provide regular reporting on the environmental performance of the Project on its website, including ensuring the following information is publicly available on its website:
 - a) a copy of all current statutory approvals;
 - b) a copy of the current environmental management strategy and associated plans and programs;
 - c) a copy of any Annual Reports (over the last 5 years);
 - d) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and
 - e) any other matter required by the Director-General.

APPENDIX A SITE PLANS



Legend

- Technology Centre Boundary
- Proposed ANE Production Facility and Access Road
- 30m Bushfire Buffer Clearance Area

FIGURE 1.3

Figure 1: Site Layout

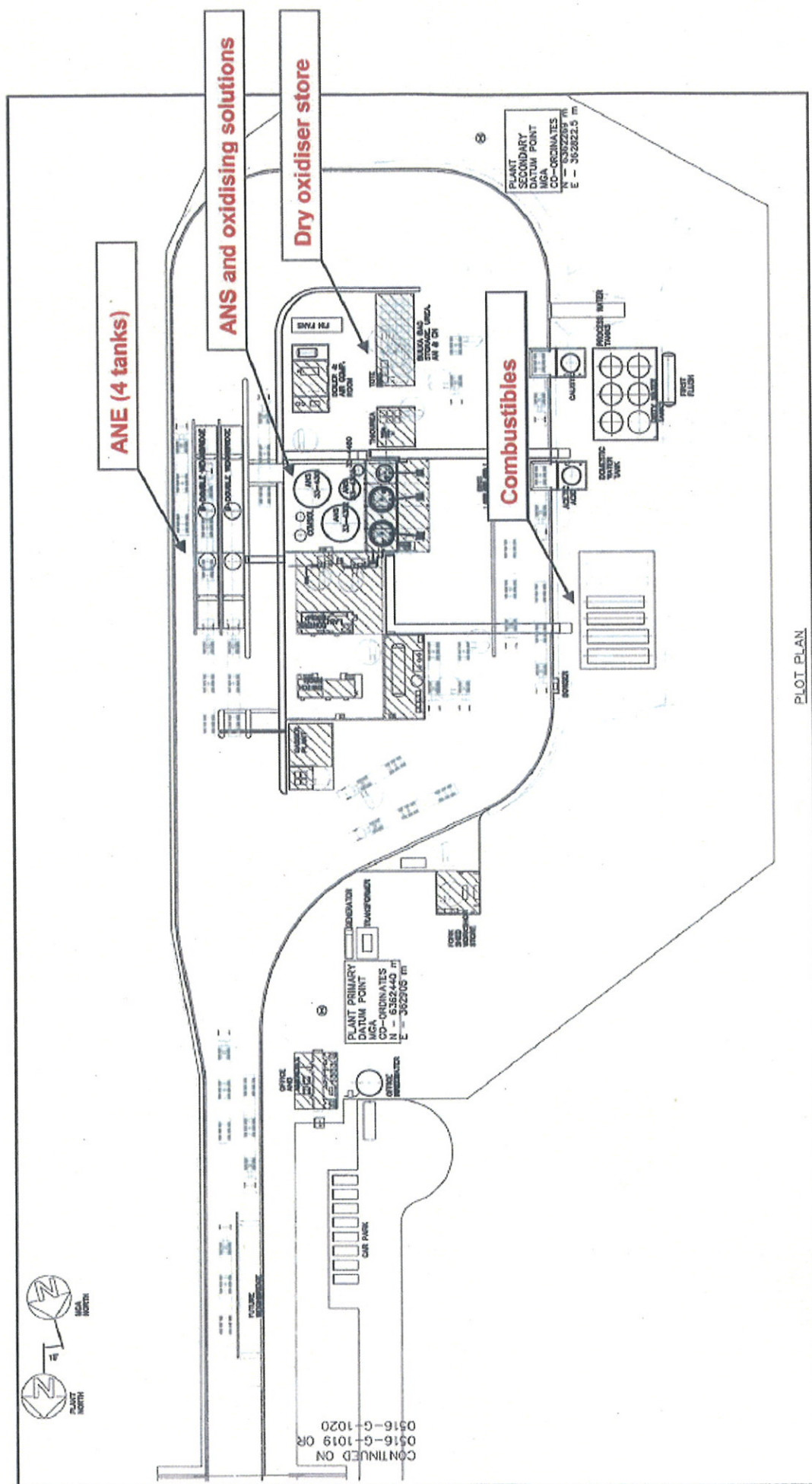


Figure 2: Conceptual Plant Layout

APPENDIX B BIODIVERSITY OFFSET AREA



Legend

- Technology Centre Boundary
- Sugarloaf State Conservation Area
- Proposed Biodiversity Offset Area
- Previously Proposed Biodiversity Offset Area
- River-flat Eucalypt Forest EEC
- Lower Hunter Spotted Gum-Ironbark Forest EEC

- Coastal Plains Smooth-barked Apple Woodland
- *Grevillea parviflora* subsp. *parviflora* (DECCW Recording)
- *Malaleuca linearifolia* (DECCW Recording)
- Possible Feed Tree for Yellow-bellied glider (DECCW Recording)

FIGURE 2

Revised Proposed
Biodiversity Offset Area

Figure 3: Biodiversity Offset Area

7.0 Draft Statement of Commitments

The DGRs for the Project require that the EA includes a Statement of Commitments which details the measures proposed by Orica for environmental mitigation, management and monitoring of the Project.

If approval is granted under Part 3A of the EP&A Act for the proposed Project, Orica will commit to the following controls.

Issue	Commitment	Timing
Compliance with the EA	The Project will be carried out generally in accordance with the Project application and the EA.	Ongoing
Ecology	The Construction Safety Environmental Management Plan (CSEMP) will include: <ul style="list-style-type: none"> measures to clearly define the limits of the clearing activities associated with the proposed ANE Production Facility and associated works. a clearing procedure for the protection of fauna will be developed in accordance with the procedures outlined in Section 6.2.4 of the EA and implemented during clearing activities. requirements for the management of erosion and sedimentation during the construction of the facility. 	<p>Prior to clearing</p> <p>Prior to and during construction</p> <p>During construction</p>
	The security fencing for the ANE Production Facility will be restricted to the building perimeter at the 30 metre fire break and will not require further vegetation clearing.	During clearing
	Existing Technology Centre site perimeter fencing will remain unchanged so as to allow fauna movement through the site.	Ongoing
	Utility easements needing to be created will, where possible, following existing fire trails/roads and other cleared areas to minimise vegetation clearing. Any minor clearing associated with utility easements will be stabilised and reseeded, where necessary, following completion of works.	During construction
	A Biodiversity Offset area is proposed to be established within the study area to offset the vegetation clearing associated with the proposed ANE Production Facility.	Ongoing

Issue	Commitment	Timing
Aboriginal Heritage	Surface collection of artefact scatter Orica AS will be undertaken in accordance with the methodology in the Aboriginal Cultural Heritage Assessment.	Prior to disturbance of the site
	Topsoil removal associated with the construction of the ANE Production Facility will be subject to monitoring by representatives of the Aboriginal community in accordance with the methodology in the Aboriginal Cultural Heritage Assessment.	During topsoil removal
	An Aboriginal Cultural Heritage module will be developed in consultation with the registered Aboriginal stakeholders for inclusion in the site induction training for construction personnel.	Prior to construction
	The CSEMP will detail the management of Aboriginal heritage material in accordance with Aboriginal Heritage Assessment Report.	During construction
Historical Heritage	If any places, sites or items of potential European heritage significance are identified during the construction phase of the Project, all activities would cease in the immediate area of the site until such time as an appropriate assessment of heritage significance is undertaken and plans to manage the site have been developed in consultation with DoP and, where relevant, the NSW Heritage Office.	During construction
Traffic	A Traffic Management Protocol and Code of Conduct for Drivers operating heavy vehicles to and from the Technology Centre will be implemented.	Prior to the commencement of transport activities associated with the proposed ANE Production Facility
Noise	The use of exhaust brakes will be restricted in both directions between John Renshaw Drive and the intersection of Echidna Drive and George Booth Drive.	Operation
	During construction, higher noise generating activities will be conducted during the day where possible.	During construction
	Investigations will be undertaken in response to any concerns raised by the community regarding traffic noise associated with the Project.	Ongoing
Hazards	Orica will design, construct and manage the Project such that the relevant risk criteria are met within the Technology Centre boundary and do not extend off site.	Ongoing
	Orica will manage potential hazards related to the transport of ANE and ANS in accordance with measures outlined in Section 6.6.2.2 including product contamination, heavy vehicles controls, and driver training.	Ongoing
Air and odour	The CSEMP will include measures to minimise air and odour impacts as a result of construction.	During construction
	The Operational Environmental Management Plan (OEMP) will detail measures to minimise air and odour during ongoing operations.	During operation

Issue	Commitment	Timing
Greenhouse Gas and Energy	A review of energy efficiency will be undertaken as part of plant and equipment procurement.	During construction
	Orica will consider the implementation of energy efficiency opportunities as described in Section 6.8.3.	Ongoing
Water	The CSEMP will include requirements to manage the erosion and sediment control measures.	During construction
	An OEMP will detail the measures to be undertaken to ensure that the water controls are being effectively maintained. This plan will include the requirements for any water quality monitoring, inspection of the diversion drains, erosion control measures and maintenance of the water management systems within the operational areas of the plant.	Operation
Bushfire	A 30 metre Asset Protection Zone (APZ) will be constructed around the proposed ANE Production Facility and maintained in accordance with the requirements of the Inner Protection Area.	During construction and ongoing
	Construction materials for the proposed ANE Production Facility will comply with the Building Code of Australia (BCA) for bushfire protection where applicable.	During construction
	The proposed ANE Production Facility access road will be sized to provide sufficient width to allow fire fighting access.	During construction
	Water supplies will be easily accessible and suitable connections for water tanks will be provided so Rural Fire Service (RFS) tankers can refill.	Ongoing
	The Site Emergency Plan and Fire Safety Management Plan will be updated to include the proposed ANE Production Facility.	During construction and operation
Waste	The CSEMP will include measures to manage waste through the design and procurement of construction materials and establishment of recycling and waste disposal systems.	During construction
	The OEMP details the management of waste materials generated during the operation of the Project.	Ongoing

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning and Infrastructure, I hereby modify the project approval (MP 09_0090) referred to in Schedule 1, subject to the Conditions in Schedules 2 and 3.

Chris Wilson
Executive Director
Major Projects Assessment

Sydney

9 November

2012

SCHEDULE 1

Project approval (MP 09_0090), granted by then Minister for Planning on 26 July 2010 for the Orica Ammonium Nitrate Emulsion Project, Richmond Vale in the Cessnock City local government area.

DEFINITIONS

1. Replacing the definition of 'Project' in the definitions list as follows:

Project	The development as described in the EA titled " <i>Proposed Ammonium Nitrate Emulsion Production Facility and Continued Operation of Orica Mining Services Technology Centre, Richmond Vale, NSW</i> ", Prepared by Umwelt Australia and dated December 2009, as modified by MP 09_0090 MOD 1.
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SCHEDULE 2

2. Replacing Condition 2 in Schedule 2 with the following:

Limits of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
 - a) EA;
 - b) modification application MP 09_0090 MOD 1 dated 10 October 2012, environmental assessment dated 8 October 2012 and accompanying plans, prepared by Umwelt (Australia) Pty Ltd;
 - c) statement of commitments;
 - d) Submissions Report; and
 - e) conditions of this approval.

SCHEDULE 3

3. Inserting new Conditions 6A, 6B and 6C after Condition 6 in Schedule 3 as follows:

Hazards and Risk (MP 09_0090 MOD 1)

- 6A. Prior to the commencement of construction works associated with MP 09_0090 MOD 1, the Proponent shall identify all hazards arising from the potential interaction of construction works associated with MP 09_0090 MOD 1 with the existing operations which are related to Schedule 15 materials identified in the *NSW Work Health and Safety Regulation 2011*.

6B. During construction works associated with MP 09_0090 MOD 1, the Proponent shall implement all necessary control measures to reduce the risks from those hazards identified by Condition 6A of this Schedule to as low as reasonably practicable.

6C. The Proponent shall ensure that the safety aspects of all construction works associated with MP 09_0090 MOD 1 are carried out in accordance with the existing Safety Management System for the site.

Note: Management of change procedures which must be followed and documented in accordance with the Work Health and Safety Regulation 2011.

4. Inserting the following Note under Condition 23 in Schedule 3 as follows:

Note: The provisions of this plan shall be implemented for all construction works associated with the project and/or modification approved thereafter.

5. Replacing Figure 2 in Appendix A with the following:



Figure 2: Detailed Site Layout

Appendix B

Environmental Aspects Register

Appendix B Environmental Aspects Register

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
1. Hazardous Event								
1.1 An explosion event	Fire at the site. Possible fatality or injury to people.	Unlikely	Extremely Serious	II	An Emergency Plan is in place	As per the Emergency Response Plan.	As per the Emergency Response Plan.	As per the Emergency Response Plan.
					A Safety Management System is in place.	As per the Safety Management System.	As per the Safety Management System.	As per the Safety Management System.
					Orica Procedure MP-SF-005 "Fire Risk Management" defines requirements to ensure proper management of fire and fire-related risks in plants handling hazardous materials. In accordance with the procedure, each plant or site handling hazardous materials shall prepare a Fire Risk Management Plan. A Fire Safety Study for the ANE Facility has been prepared.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.

³ Refer Table 2, Appendix B

⁴ Refer Table 3, Appendix B

⁵ Refer Table 4, Appendix B

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					<p>Orica Procedure MP-SG-018 "Major Hazard Facilities" identifies key requirements for compliance with the Australian National Standard for the Control of Major Hazard Facilities.</p> <p>The objective of the procedure and the National Standard is to prevent major incidents and near misses, and to minimise their effects. For example, Hazard Assessments shall be carried out for all Major Hazard Facilities. A Hazard Analysis and Hazard Study have been prepared for the ANE Facility.</p>	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
					Measures and safeguards as outlined in the Final Hazard Analysis, and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.	As per the Final Hazard Analysis and Hazard Study Report.
	Fire at the site. Possible fire in bushland as a consequence.	Possible	Highly Significant	II	Implementation of the measures and safeguards within Fire Safety Study recommendations.	As per the Fire Safety Study.	As per the Fire Safety Study.	As per the Fire Safety Study.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Implement the recommendations of the “Bushfire Threat Assessment” included in the EA and measures outlined in the Submissions Report, including:	Check access road clearance.	Weekly.	Technical Centre Manager.
					<ul style="list-style-type: none"> Maintain a minimum 4 m vertical clearance to any overhanging obstructions including tree branches along the access road; Maintain 2 x 70,000litre water tank dedicated to fire-fighting purposes. 	Check water level in tank.	Continuous via Control System Low level Alarms set	ANE operational staff.
					Maintenance of the 30 metre wide perimeter bushfire clearance zone in accordance with the Bushfire Threat Assessment” included in the EA.	Check perimeter bushfire clearance zone.	Monthly.	Technical Centre Manager.
					Water supplies will be easily accessible and suitable connections for water tanks will be provided so Rural Fire Service tankers can refill.	Checks of connections and water levels.	Monthly.	Technical Centre Manager

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
1.2 Chemical spill	Chemical entering the stormwater system.	Likely	Serious	II	Spill kits and spill management procedures.	Visual inspection to confirm kits appropriately stocked and located.	Weekly or after use.	ANE Operational Staff.
					Chemical storage areas are maintained in a clean and usable condition.	Check for cleanliness, usable condition, leaks.	Daily.	ANE Operational Staff.
					Chemical storage containers are in good working order and contents clearly marked.	Check for cleanliness, usable condition, leaks.	Daily.	ANE Operational Staff.
					Control valves on the stormwater system will ensure that no chemicals will be released offsite in the event of spill event outside of the bunded areas.	Clean and test "Stormceptor" and maintain waste water system.	Monthly and after rainfall.	ANE Facility Manager.
1.3 Leakage of storage tank	Chemical entering the stormwater system.	Unlikely	Serious	III	Orica Procedure MP-SF-025 "Storage and Handling of Dangerous & Non-Dangerous Goods" defines the requirements for the	Bund level and cleanliness checked.	Daily.	ANE Facility Manager. ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					safe storage and handling of company owned “chemical” goods, both dangerous and non-dangerous, including raw materials. For example, potential ignition sources shall be excluded from areas where flammable and combustible goods are stored and handled. At the ANE Facility, all chemicals, fuels and oils are stored in bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund.			
					Chemical storage containers and storage areas are maintained in a clean and usable condition.	Check for cleanliness, usable condition, leaks.	Daily.	ANE operational staff.
					Process areas are fully contained within bunded areas. Stormwater from these areas is captured for reuse by the water management system.	Bund level and cleanliness checked.	Daily.	ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
2. Traffic								
2.1 Preservation of neighbourhood amenity	Illegal parking outside of site, speeding or unsafe driving causing safety risk to others on road.	Unlikely	Notable	IV	Speed limits and parking areas signposted clearly.	Check signs are in place, and visible.	As required.	ANE Facility Manager.
					Road Transport Protocol, including a Traffic Management Plan and a Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.
					<p>Orica Procedure TM-01 “Vehicles on site” defines requirements for the safe operation of all vehicles on company owned or controlled sites, including those of contractors, in order to minimise the risks to the health and safety of employees and others working with or near vehicles. For example:</p> <ul style="list-style-type: none"> Where there is mixed occupation of vehicle and pedestrians, all pedestrians must wear high visibility clothing. Vehicles left unattended must be parked in designated parking areas. 	Regular visual checks.	As required.	ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
2.2 Vehicle Accidents	Chemical Spill/ possible fatality or injury.	Unlikely	Highly Significant	III	Road Transport Protocol, including a Traffic Management Plan and a Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.
					Each vehicle carries an Emergency Procedure Guide which summarises the actions to be undertaken in the event of a vehicle fire and a guide for each type of product being carried.	Vehicle inspections.	Random as required and as per biennial audit.	ANE operational staff.
2.3 Fuel/Oil leakage	Fuel entering the stormwater system.	Very Unlikely	Serious	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.
					Control valves on the stormwater system will ensure that no fuels or oils will be released into downstream drainage lines.	Confirm operation of Control valve	Monthly.	Contractor
3. Noise								
3.1 Preservation of	Disruption to residents by heavy vehicle noise.	Likely	Significant	II	Measures within Road Transport Protocol, including Code of Conduct for drivers.	As per the Road Transport Protocol.	As per the Road Transport Protocol.	As per the Road Transport Protocol.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
neighbourhood amenity								
					An Independent Traffic Audit of the development will be conducted within six months of the commencement of operation of the ANE Facility, and every three years thereafter.	Random monitoring	Three Yearly	Independent DOP Approved Auditor
					Investigations will be undertaken in response to any concerns raised by the community regarding noise associated with the ANE Facility.	Monitoring as required.	Monitoring as required.	ANE Facility Manager.
	Disruption to residents by operational noise at the Facility.	Unlikely	Significant	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Noise generated from the project will not exceed 35 dB(A) $L_{Aeq}(15 \text{ minute})$ at the nearest residential receptor at any time.	Check equipment in good working order, and that there is no damage or other condition occurring that could affect noise levels.	As Required	Independent Auditor
					Orica Procedure MP-EP-014 "Neighbourhood Impact" defines requirements for the management of the impact of operating sites on neighbours (e.g. Noise). For example, the potential for the introduction of new equipment and modification of existing equipment to generate unacceptable impacts beyond the site boundaries shall be assessed.	Monitoring as required.	Monitoring as required.	ANE Facility Manager.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
4. Air Quality and Odour								
4.1 Preservation of local air quality	Atmospheric pollutants	Extremely Unlikely	Significant	IV	All plant and equipment used at the ANE Facility will be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.
4.2 Preservation of local amenity value	Lights and other amenity issues disturbing neighbours.	Extremely Unlikely	Significant	IV	Orica Procedure MP-EP-014 "Neighbourhood Impact" defines requirements for the management of the impact of operating sites on neighbours (e.g. Dust, vibration, odour, light, aesthetic impact). For example, where required, nuisance management plans shall be developed to address community expectations and/or local legislative and licence requirements.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					All lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network to comply with the latest version of <i>Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting</i> .	Check lighting is compliant with requirements.	Biennial compliance audit or as required via change.	ANE Facility Manager.
5. Water Quality and Management								
5.1 Surface Water Control	Contaminated or dirty water exits the site.	Unlikely	Highly Significant	III	Implementation of Water Management Plan which segregates clean water runoff, stormwater and process water from process areas, non-process areas, and the surrounding areas.	Check no obstructions to water flow and segregation of waters.	Daily.	ANE operational staff.
					A Soil and Water Management Plan for Operation, including a Stormwater Management Plan and an Erosion and Sediment Control Plan is in place.	As per the Soil and Water Management Plan for Operation.	As per the Soil and Water Management Plan for Operation.	As per the Soil and Water Management Plan for Operation.
					Comply with Section 120 of the POEO Act 1997.	Check no obstructions to water flow and segregation of waters.	Daily.	ANE operational staff. ANE Facility Manager.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Control valves on the stormwater system will ensure that no fuels or chemicals will be released into downstream drainage lines.	Confirm operation of Control valve	Monthly	Contractor
					Ensure that all chemicals, fuels and oils associated with the ANE Facility are stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund.	Bund level and cleanliness checked.	Daily and after rainfall.	ANE operational staff. ANE Facility Manager.
5.2 Overflow of Surface water from adjacent bushland	Local flooding	Possible	Notable	III	Maintenance of surface water diversion channels and underground drains to prevent scour, erosion and sedimentation.	Visual inspection to ensure no obstructions to drains and to detect any signs of erosion.	Monthly	ANE operational staff.
	Flooding of site and sediment build up at the ANE Facility.	Very Unlikely	Significant	IV	Maintenance of surface water diversion channels and underground drains.	Visual inspection to ensure no obstructions and no damage.	Monthly	ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
6. Waste Management								
6.1 Poor waste management	Waste not collected and disposed appropriately.	Unlikely	Significant	IV	Orica Procedure MP-EP-004 "Waste Management" defines requirements for waste management and reporting. For example, the sources of waste streams shall be identified, characterised and quantified and the material hazards, environmental impact and cost of management of each waste stream shall be assessed.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	As Required	ANE operational staff. ANE Facility Manager.
					Ensure that all waste generated by the Project during operation is classified in accordance with the <i>Waste Classification Guidelines – Part 1: Classifying Waste 2014</i> and if required, disposed of to a facility that may lawfully accept the waste.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	Weekly.	ANE operational staff. ANE Facility Manager.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
	Waste taken to inappropriate disposal sites.	Very Unlikely	Significant	IV	All non-recyclable wastes would be assessed in accordance with the <i>Waste Classification Guidelines – Part 1: Classifying Waste 2014</i> and disposed of by an approved licensed contractor to a facility that may lawfully accept the waste.	Check that any waste produced on site is taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.
6.2 Re-use and recycling	Recyclables taken to local landfill rather than recycled.	Very Likely	Notable	IV	Recycling provisions in accordance with council requirements and the <i>Waste Avoidance and Resource Recovery Act 2001</i> .	Check that any waste produced on site is taken to the appropriately labelled storage bin and taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.
6.3 Use of natural resources	Natural resources not conserved.	Very Unlikely	Serious	IV	The Water Management Plan details the sourcing of water collected at the site to reduce the need to source potable water from off-site.	As per the Water Management Plan.	As per the Water Management Plan.	As per the Water Management Plan.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-EP-007 "Resource Conservation" defines requirements to conserve natural resources through the minimisation of the consumption of energy and non-renewable resources throughout the company's operations as a step towards the sustainability of the company's activities. For example, where practicable, reused or recycled materials shall be selected for use in preference to virgin materials.	Orica Procedure Audit.	Ongoing.	ANE Facility Manager.
					Orica will implement energy efficiency opportunities as described in the EA.	As required.	Ongoing	ANE Facility Manager

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
7. Ecology								
7.1 Wildlife or avifauna entering site	Harm/distress of native fauna.	Likely	Serious	III	Orica Procedure MP-EP-009 "Wildlife Conservation" defines requirements to conserve the flora and fauna within the site's ecosystem and sensitive areas outside the site's boundary which may be affected by site activities. For example, a survey shall be carried out to assess the conservation value of the flora and fauna established within the site.	Monitoring N/A.	Monitoring N/A.	Capability Specialist.
	Safety risk to site workers.	Likely	Highly Significant	II	An ecologist or similar may be contacted to assist removal of the animals (e.g. snakes) or birds from the site where they are threatened by the operations or present a threat to the safety of the operational personnel.	Monitoring N/A.	Monitoring N/A.	Capability Specialist
7.2 Impact on adjacent native bushland	Spread of weed species into adjacent native bushland.	Unlikely	Significant	IV	"Landscaped" areas at the ANE Facility and Technology Centre site to be regularly maintained and checked to ensure they are weed-free.	Visual inspection to check areas tidy and weed-free.	Weekly.	ANE Facility Manager and Capability Specialist

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
	Damage to native vegetation as a result of operations.	Unlikely	Highly Significant	III	Implementation of the relevant measures in the Vegetation Management Plan.	As per the Vegetation Management Plan.	As per the Vegetation Management Plan.	As per the Vegetation Management Plan.
8. Bushfire								
8.1 Bushfire in adjacent bushland	Potential explosion at the ANE Facility. Fatality or injury to staff at the ANE Facility.	Unlikely	Catastrophic	I	Implementation of the safeguards and recommendations of the Fire Safety Study and the "Bushfire Threat Assessment" included in the EA.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.	As per the Fire Safety Study and 'Bushfire Threat Assessment'.
					Implement the recommendations of the "Bushfire Threat Assessment" included in the EA and measures outlined in the Submissions Report.	Check access road clearance and water level in tank.	Daily.	Capability Specialist.
					Maintenance of the 30 metre wide perimeter bushfire clearance zone in accordance with the Bushfire Threat Assessment" included in the EA.	Check perimeter bushfire clearance zone.	Monthly.	ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Water supplies will be easily accessible and suitable connections for water tanks will be provided to Rural Fire Service tankers can refill.	Check water level in tank.	Daily.	ANE operational staff.
					2 x 68,000 litre water tanks for bushfire fighting purposes is located on the site.	Check water level in tank.	Daily.	ANE operational staff.
9. Aboriginal and Historic Heritage								
9.1 Aboriginal archaeology uncovered at the site	Damage to relics/ artefacts.	Very Unlikely	Serious	IV	In the event of an Aboriginal artefact being discovered, work in the immediate vicinity shall cease and the Heritage Division, Department of Premier and Cabinet shall be notified.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
9.2 Damage to Historical Heritage	Damaging the significance of any heritage listed items on site or surrounds.	Very Unlikely	Serious	IV	Orica Procedure MP-EP-020 "Heritage Protection" defines requirements and a methodology for identification, determination, conservation and protection of places of significant natural, cultural, historical, heritage and/or aesthetic value (referred to as heritage sites).	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
10. Site Access								
10.1 Unauthorised access to site	Damage to property / Interruption to production / Harm to unauthorised person who entered site.	Unlikely	Extremely Serious	II	Maintenance of security fence, security cameras, controlled entry, and security procedures.	Check all security measures in place and functioning.	Daily.	ANE Facility Manager. ANE operational staff
11. Cumulative Impact								
11.1 Cumulative Impacts	Long-term degradation of land.	Unlikely	Extremely Serious	II	Orica Procedure MP-EP-003 "Land Protection Management" describes requirements for the investigation and maintenance of records of present and past activities, which have the potential to adversely impact on the beneficial use of the land and/or groundwater within and surrounding the site. For example, information regarding historic incidents, past practices and the discovery of contamination due to past events shall be reported to the Company Land Remediation Manager.	Recording of all spills. Regular checks of all bund and chemical storage areas to ensure integrity.	As required.	ANE Facility Manager. ANE operational staff.

Issue	Effect	Likelihood ³	Consequence ⁴	Risk/ Level ⁵	Controls and Safeguards and Actions	Type of Monitoring Required	Frequency of Monitoring	Role Responsible
					Orica Procedure MP-EP-001 "Decommissioning, Decontamination & Removal of Plant & Equipment & Remediation of Land" describes requirements to ensure safety, health and the environment are protected when decommissioning and removing plant and equipment during maintenance outages or when remediating land. For example, a Responsible manager shall be appointed to manage any significant decommissioning, decontamination and removal projects and/or the remediation of land.	Monitoring N/A.	Monitoring N/A.	Monitoring N/A.
	Long-term impact to water quality.	Unlikely	Significant	IV	Implementation of the Water Management Plan to segregate waters of different quality and contain all dirty/contaminated surface runoff within the footprint of the ANE Facility site.	As per the Water Management Plan.	As per the Water Management Plan.	As per the Water Management Plan.

Table 2 Likelihood Definitions

SHES LIKELIHOOD MATRIX	
Almost Certain	- Expected to occur during task / activity; - Would occur within a year.
Likely	- Likely to occur during task / activity; - Would occur within 10 years.
Possible	- May occur during task / activity; - Will occur once in the life of the facility.
Unlikely	- Unlikely to occur during task / activity; - Has occurred somewhere in the world.
Rare	- Highly unlikely, but possible to occur during task / activity; - Could theoretically occur.

Table 3 Consequence Matrix

SHES CONSEQUENCE MATRIX					
	Safety & Health	Environment	Community & reputation	Legal compliance	Property damage
Critical	Multiple fatality	> 6 month impact	Prolonged global media	Loss of licence to operate	> A\$20M
Very High	Single fatality	3 – 6 months impact	Global media	Suspension of licence to operate	> A\$10M
High	Lost workday	> 1 month impact	National media	Major fine	> A\$1.0M
Medium	Medical treatment	> 1 week impact	Regional media	Minor fine	> A\$ 0.5M
Low	First Aid	< 1 week impact	Local media	Official caution	> A\$0.1M

The risk rating at Table 4 is determined by combining the likelihood result (Table 2) and consequence result (Table 3).

Where the matrix approach is used, undertake the following, based on risk ranking:

- if the risk ranking is level 1, the activity must not proceed until additional controls are identified to reduce the risk level, or, the activity is approved; or
- if the risk ranking is level 2, the activity must not proceed until additional controls are identified to reduce the risk level, or, the activity is approved; or
- if the risk ranking is level 3, attempt to identify additional controls. If no additional controls are identified, the activity can proceed after it is approved; or
- if the risk ranking is level 4, the activity can proceed without approval.

Table 4 Risk Assessment Matrix

	Low	Medium	High	Very High	Critical
Almost Certain	Level II	Level II	Level I	Level I	Level I
Likely	Level III	Level II	Level II	Level I	Level I
Possible	Level III	Level III	Level II	Level II	Level I
Unlikely	Level IV	Level IV	Level III	Level III	Level II
Rare	Level IV	Level IV	Level IV	Level IV	Level III

Appendix C

Example ANE Plant Induction

Appendix C Example ANE Plant Induction



Kurri ANE Plant Site Induction

Orica Mining Services Kurri

Updated 4/11/2019

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Kurri ANE Plant

The Kurri ANE Plant, being an ammonium nitrate emulsion manufacturing facility, has been determined by the SafeWork NSW Major Hazard Facilities Unit to be a Major Hazard Facility.

The ANE Plant is a production facility for the manufacturing of primarily Ammonium Nitrate Emulsion that is utilised for explosive blasting at mine sites primarily in the Hunter region. This ANE product, a class 5.1 oxidising agent, once manufactured is transported via chemical B-double or single transit trucks to these mine sites at which they are sensitised to a class 1.1D product for blasting purposes. The plant has the capability for the production of up to approximately 250,000 tonnes.

Why are you doing this induction?

You have not yet been inducted

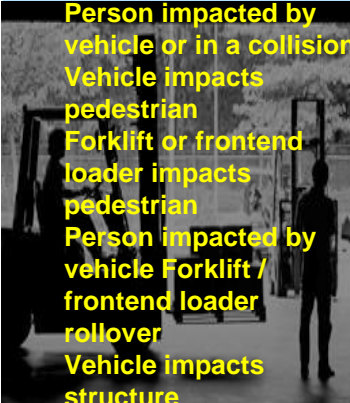
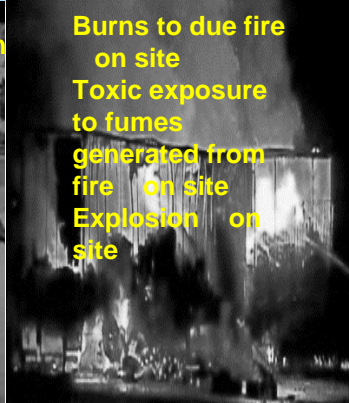
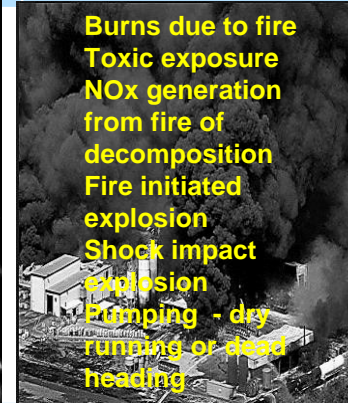
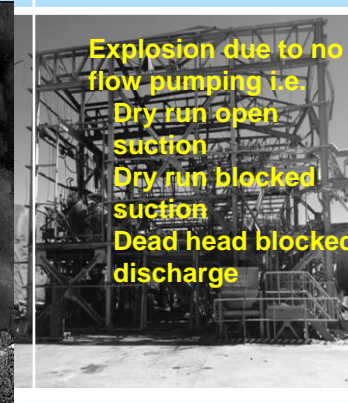

- You are a contractor

- You are an employee

You are inducted but are due for a re-assessment

- You should be re-assessed every 12 months

Kurri ANE Plant -Top 5 Fatal Risks

1. Vehicle, Mobile Equipment and Pedestrian Interactions On-Site	2. Fire on Vehicles and Mobile Equipment	3. Decomposition of Ammonium Nitrate Emulsion (ANE)	4. Pumping ANE and Oxidiser Solutions	5. Hot Work on ANE and Oxidiser Equipment
 <p>Person impacted by vehicle or in a collision Vehicle impacts pedestrian Forklift or frontend loader impacts pedestrian Person impacted by vehicle Forklift / frontend loader rollover Vehicle impacts structure</p>	 <p>Burns to due fire on site Toxic exposure to fumes generated from fire on site Explosion on site</p>	 <p>Burns due to fire Toxic exposure NOx generation from fire of decomposition Fire initiated explosion Shock impact explosion Pumping - dry running or dead heading</p>	 <p>Explosion due to no flow pumping i.e. Dry run open suction Dry run blocked suction Dead head blocked discharge</p>	 <p>Hot work initiated fire Burns due to fire when equipment is not decontaminated Clothing fire due to oxidiser contamination</p>

Controls

<p>Cabin protection system Seat belts fitted and worn Traffic Management Plan Pedestrian crossings must be used at all times Site Emergency Plan Site Induction First Aid training</p>	<p>Battery isolation switch outside vehicles Vehicle mounted fire extinguishers Placarding of loads / vehicle EIPs Emergency Procedure Guides (EPGs) carried Specific vehicle Traffic Management Plan Site Emergency Plan Routine emergency exercises (drills)</p>	<p>Gap separation requirements for AN Storage Plant personnel are trained to evacuate Personnel trained in pump operations</p>	<p>Personnel trained in pump operations High temperature alarm/trip interlock system High and low pressure alarm/trip interlock system Thermofuse Pump trip speed limited Maintenance and inspection programme</p>	<p>Decontamination procedure Decontamination Permit to Work Personnel trained in decontamination procedures Site Emergency Plans</p>
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Commitment to Safety

Employees and Contractors must sign SHEC Charter.

Charter to be completed every 12 months.

To be signed by your line manager

MY COMMITMENT TO SHEC

EXPECTATIONS - LINE MANAGERS

- Clearly communicate our SHE Policy, Our Charter, Our Values and our expectations and keep SHEC central to all of our decisions, actions and communications
- Know the site Major Hazards and ensure that Key Controls are in place and effective 100% of the time
- Conduct regular Leadership Interactions and Key Control Verifications with your team
- Lead the development and implementation of SHEC plans
- Ensure rules and procedures for preventing SHEC incidents are in place and are enforced
- Lead by example - set high SHEC standards, follow rules, procedures and use good work practices
- Know the SHEC requirements of the job performed by the people you lead and ensure they are appropriately trained
- Audit work practices frequently and do not tolerate deviations from required standards, addressing known SHEC non-conformance or improvement opportunities with proper priority
- Ensure all contractors are managed or supervised to the same standards as Orica employees
- Create an environment of openness, trust and mutual respect allowing everyone to excel and be recognised for good SHEC performance
- Participate in SHEC incident investigations and ensure actions are followed through to effective completion
- Promptly arrange rehabilitation for an ill or injured employee providing full support for them and their family.

Line Manager

Signed _____

Name _____

Date _____



Safety is our priority. Always.

The most important thing is that we all return home, safely, every day.

We respect and value all.

Our care for each other, our customers, communities and the environment builds trusted relationships.

Together we succeed.

Collaboration makes us better, individually and collectively.

We act with integrity.

We are open and honest, and we do what is right.

We are committed to excellence.

We take accountability for our business and for delivering outstanding results.

OUR SAFETY, HEALTH, ENVIRONMENT & COMMUNITY COMMITMENT

 **Safety** is our priority. Always.

To achieve our vision of Zero Harm, the way we work and live must be consistent with **Safety, Health, Environment & Community (SHEC)** behaviours such as:

- Personal accountability
- Active participation
- Constant promotion
- Awareness on and off the job
- Visible line leadership
- Adherence to procedures
- Setting clear expectations
- Taking care of yourself and others

If you see someone working in an unsafe manner and you don't confront that person on the issue, are you really valuing that person?

Don't be afraid to stop the job if it's not safe.

Discussing, confirming and signing off on our commitment each year demonstrates that we care for each other and clearly support Our Charter and Our Values.

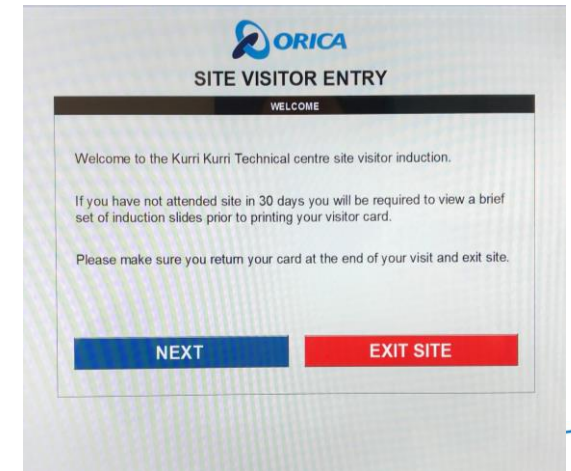


Visitors

Visitors are required to Log in to the Site Visitors Entry Computer Database located inside the Administration Building.

All Visitors to remain accompanied by a designated Orica employee

Visitors are required to Log out of the Computer Database upon leaving the Site.



Before you Start

Obtain competency record:

From your site contact;

Complete this as you watch this screen show.

Complete personal information:

Photo ID required for Site access

Contact details;

Licence details;

Including: SSAN, DG, Drivers Licence and relevant tickets if performing work on site (e.g. Rigger, Crane Operator),

Copy of Contractor Passport (pump competency).

All details must be legible on induction form.

If your details are not completed in full, your induction will be invalid, and will not be entered into the electronic system.



Site Contacts

Senior Supervisor - Plant : **David Horne**

Supervisors: **Allan McClelland, Dean Thomson, Andrew Ong**

Maintenance Planner: **John Galley**

Supervisor - Site Facilities (KKTC): **Ryan Bremmell**

Safety Equipment

Hard Hat

Safety Glasses at all times on plant

Long sleeves, long trousers or overalls

No rolling up sleeves!

High Visibility shirt/jacket

Safety Boots **Ankle height lace up**

Correct Gloves, must be worn or on glove clip at all times ready for use

Face shield as required

Additional PPE as required for the task



Hazards of Oxidiser Contaminated PPE

Personal Protective Equipment is detailed in the Kurri ANE Operating Manual. The selection of PPE has been considered using the Safety Data Sheet (SDS) and a risk assessment.

Oxidiser solution:

Supports combustion;

May intensify a fire.

You should:

Avoid contamination with other chemicals;

Avoid skin and eye contact.

Prevention:

Keep contaminated clothing away from heat / sparks / open flames / hot surfaces. No smoking

Ensure contaminated clothing is thoroughly washed;

Take any precaution to avoid mixing with combustibles / incompatible materials.

Wash hands thoroughly after handling.

Wear eye protection.

IF CLOTHES ARE CONTAMINATED DO NOT CONDUCT ANY HOT WORK



Site Security

Security Cameras monitor all operational areas on the ANE site.

Cameras constantly record all activity on site.

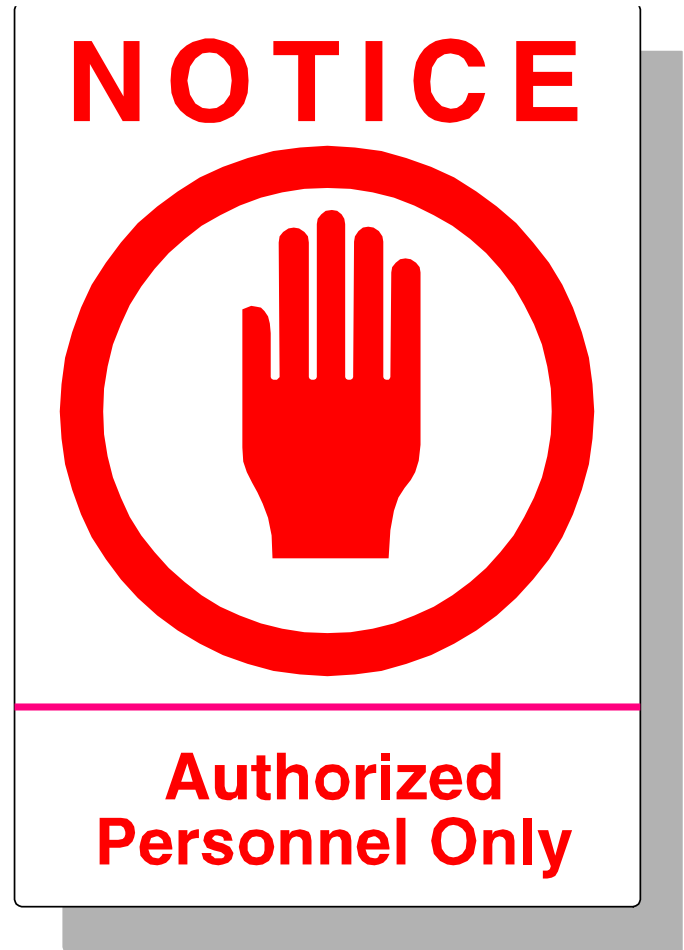


Site Security and SSAN

**SSAN = Security Sensitive Ammonium Nitrate
(Security Clearance)**

Report all suspicious activity.

Only SSAN approved personnel to have
un-supervised access to Ammonium
Nitrate and Ammonium Nitrate
Emulsion.



Chemicals

The Kurri ANE Plant is a chemical processing plant:

Do not handle chemicals without authorisation;

Do not bring chemicals onto site without prior approval;

Refer to a chemicals SDS before handling for the first time.

**Ammonium Nitrate heated under confinement
can explode.**

Appendix D

Site Induction Assessment Form

Appendix D Site Induction Assessment Form

Appendix E

Summary of Training

Appendix E Summary of Training / Inductions / Drills

The below table is a summary of training requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Emergency Plan: Revision 11, 02/12/2016 (Orica);
- Orica ANE Production Facility Road Transport Protocol Rev D (Orica, 2019) (Operational RTP),
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Summary of Training / Inductions / Drills

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Driver training	All drivers of vehicles carrying ANE and ANS are to undergo emergency response training for incidents such as vehicular accidents or fires as part of their Dangerous Goods certification and internal Orica emergency training.	Prior to commencing work driving vehicles carrying ANE and ANS.	Contractor, SH&E team representative.	Response to Submissions.	Table 2.1
	Truck drivers operating the ANE and ANS deliveries with Toll are given a site induction at the ANE Facility where they are trained by an Orica authorised representative.	Prior to commencing work driving vehicles carrying ANE and ANS.	ANE Operational Staff.	This EMS.	3.2
	Orica requires that all ANS, ANE and any other heavy vehicle driver complete specific training including information on Orica's Safety Management Systems, information on the products being transported and the controls in place to ensure safe transport of the product. The SH&E induction provided to all heavy vehicle drivers will include operational traffic components including those outlined in the Operational RTP. Ensure the reinforcement of the community impacts associated with traffic movements during site meetings and inductions such as the restrictions on the use of exhaust brakes along George Booth Drive between John Renshaw Drive and the site.	Prior to commencing work driving vehicles carrying ANE and ANS.	ANE Facility Manager.	Road Transport Protocol.	1.3 and 2.3
Site Induction	Conduct site induction for all personnel that includes details of: <ul style="list-style-type: none"> Emergency arrangements (including nature of emergencies); Site Emergency Alarm; Muster point operation; Emergency evacuation procedures; Initial responses to site incidents. 	Prior to any new personnel commencing at the site and reassessment at least every 12 months thereafter.	ANE Operational Staff	Kurri Kurri Emergency Plan.	12.1
				This EMS.	2.3 and 3.1

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	During site induction, roles and environmental responsibilities will be communicated to all staff and contractors at the ANE Facility, so that all personnel understand their role in environmental performance at the site, and are aware of the key environmental management roles.	Prior to any new personnel commencing at the site and reassessment at least every 12 months thereafter.	ANE Operational Staff	This EMS.	2.3 and 3.1
Emergency Training	Conduct routine desktop exercises and drills to build competency in the Orica Kurri Kurri Emergency Response Organisation Structure and to confirm that capability is in place.	To be determined.	Chief Warden.	Kurri Kurri Emergency Plan.	6.1
	Hold an emergency exercise involving sounding of the Site Emergency Alarm, activation of the emergency plan and on-site response to a simulated scenario (scenarios will be chosen to cover a range of possible events identified in the emergency plan).	At least one per year.	Capability Specialist.	Kurri Kurri Emergency Plan.	12.3
	Invite external emergency services to participate and/or critique emergency exercise.	Critique at least one exercise per annum.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.3
	A full debrief of each emergency exercise will be undertaken, with actions and opportunities for improvement identified. These actions will be loaded into the ENABLON action management module.	Within one month following each emergency exercise.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.3
	Assess the effectiveness of emergency training.	As part of the internal audits of the Emergency Plans, & SH&E Training Procedures, as well as during the debriefing of emergency exercise.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.1

Appendix F

Summary of Notifications

Appendix F Summary of Notifications

The below table is a summary of notification requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Emergency Plan: Revision 11, 02/12/2016 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Summary of Notifications

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
If Site Incident occurs.	Notify the relevant authorities of pollution incidents causing or threatening material harm to the environment immediately upon becoming aware of the incident.	Notify immediately upon becoming aware. (Written details within 7 days)	ANE Facility Manager.	EPL 4121.	R2
	Notify the Director-General of the DPIE and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Project.	Notify immediately. (Report within 7 days)	ANE Facility Manager.	The Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 3
If Conservation Area Deteriorates.	Inform the Director-General of the Environment, Energy and Science Group, DPIE as soon as practicable after becoming aware of the deterioration of any of the natural values or cultural values of the conservation area, or of any threat to these values.	As soon as practicable after becoming aware of the deterioration.	Technical Centre Manager.	Conservation Agreement (between the Minister <i>Administering the NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	3.2
If Ownership Changes.	Notify the Director-General of the Environment, Energy and Science Group, DPIE in writing of any change of Ownership or control of the conservation area. The notice must include the name and address of the new owner.	Within 28 days after the change of ownership and control.	Technical Centre Manager.	Conservation Agreement (between the Minister <i>Administering the NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	5

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
If Sighting Threatened Species.	When threatened species are sighted, contact the Environment, Energy and Science Group, DPIE to record the sighting on the NSW Wildlife Atlas and obtain the latest management advice relating to the particular species.	When threatened species are sighted (including but not limited to species listed in Annexure B of the Conservation Agreement).	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1i
If Thinning Revegetation.	If thinning of regenerating indigenous species which are altering the structure of the vegetation and/or reducing conservation values.	Thinning should be planned in consultation with the Environment, Energy and Science Group, DPIE and may require approval under the <i>Native Vegetation Conservation Act 2003</i> or subsequent legislation.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1m

Appendix G

Summary of Reporting

Appendix G Summary of Reporting

The below table is a summary of reporting requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Emergency Plan: Revision 11, 02/12/2016 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Orica ANE Production Facility Road Transport Protocol Rev D (Orica, 2019) (Operational RTP),
- Biodiversity Offset Area Vegetation Management Plan Rev 3 (Umwelt, 2018);
- Conservation Agreement (between the Minister Administering the NSW National Parks and Wildlife Act (1974) and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Summary of Reporting

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Website	Provide regular reporting on the environmental performance of the Project on Orica's website, including: a. A copy of all current statutory approvals; b. A copy of the current environmental management strategy and associated plans and programs; c. A copy of any Annual Reports (over the last 5 years); d. A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; e. Any other matter required by the Director-General (DPIE); f. Any pollution monitoring data as required by section 66(6) of the POEO Act.	From the end of 2010. Pollution monitoring data must be published within 14 days of obtaining the data.	ANE Facility Manager.	The Project Approval (09_0090) (as modified). POEO Act	Schedule 4, Cndtn 5 Section 66(6)
Road Transport Protocol.	The Operational RTP will be made available on the Orica website and hard copies available on request and kept in each delivery vehicle.	During operations.	ANE Facility Manager	Road Transport Protocol.	2.6
AEMR	Submit an Annual Environmental Management Report (AEMR) for the Project to the Director-General of the DPIE as per the requirements of Schedule 4, Condition 2 of the Project Approval.	Within 12 months of the Project Approval and annually thereafter.	ANE Facility Manager.	The Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 2
	Chemical spraying will be carried out in accordance with the <i>Pesticides Act 1999</i> with records of use maintained on site for a period of three years. A summary of the weed management activities carried out on site will be reported each year in the Annual Environmental Management Report.	Annually.	Capability Specialist.	Vegetation Management Plan.	4.4.3
	A weed control report is to be submitted to the Environment, Energy and Science Group, DPIE annually. The results of the weed control program	Annually.	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	are to be included in the Annual Environmental Management Report for the site.				
	<p>An Ecological Monitoring Report will be prepared after each monitoring event and will document the monitoring methods and results from the monitoring program. This report will provide a comparison of the data collected with previous results as well as include management recommendations and ameliorative methods for ongoing management of the Biodiversity Offset Area.</p> <p>A copy of the Ecological Monitoring Report will be provided to the Environment, Energy and Science Group, DPIE as part of the reporting requirements for the Conservation Agreement. Results of the ecological monitoring will also be included in the Annual Environmental Management Report provided to DPIE.</p>	Annually for five years.	Technical Centre Manager.	Vegetation Management Plan.	6.0
Annual Return	Complete and supply to the EPA an Annual Return in the approved form for each reporting period. The reporting period is the period of 12 months after the issue of the licence, and each subsequent period of 12 months. EPL 4121 was issued 4 January.	Annually. To be supplied to the EPA by registered post not later than 60 days after the end of each reporting period.	Technical Centre Manager.	EPL 4121.	R1
Annual Performance Report – Stormceptre Discharge	Complete an Annual Performance Report for the ANE plant Stormceptre Discharge, which must include an assessment of stormwater discharge quality monitoring data obtained during the reporting period. The report must be submitted to the EPA with each Annual Return.	Annually. To be supplied to the EPA with each Annual Return.	ANE Facility Manager.	EPL 4121.	E1
Emergency Plan	Audit the Emergency Plan based on the audit checklist and requirements of Orica Procedure MP-	Annually.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.4

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
	SG-20 "Emergency Plans". The audit outcomes and any actions identified will be recorded in ENABLON.				
	<p>The Emergency Plan will be updated following the internal audit process. The following activities may also trigger an update of the plan:</p> <ul style="list-style-type: none"> • Changes to staffing; • Changes to neighbourhood populations; • Changes to adjacent premises; • Changes to Orica or Statutory requirements; • Outcomes of incident investigations; • Outcomes of the periodic hazard study process; • Learning from emergency exercises; • After a near miss on any part of the site; • After a Significant Incident in a similar plant; • Change in surroundings, i.e. land use; • After capital improvement or plant project modifications; • After revision of Basis of Safety. 	Biennially following the internal audit process.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	12.5
	Resubmit the Emergency Plan to the Director-General of the DPIE for approval when there are significant changes to the plan.	If there are significant changes.	Technical Centre Manager.	Kurri Kurri Emergency Plan.	1.5.1
	Provide the updated Emergency Plan to the FRNSW for review as per the requirements in the NSW <i>Work Health and Safety Regulation 2017</i> .	If the Emergency Plan is updated.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre..	1.5 and 5.7
Monitoring Report.	Complete a monitoring report, including photo-point photos, noting changes occurring in the Conservation Area. This will form the basis for decisions about ongoing management actions. A copy of all monitoring reports should be forwarded to the DPIE.	From time to time.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1u

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Appendix H

Inspection Checklists

Appendix H Inspection Checklists

Appendix I

Table of Monitoring Measures

Appendix I Table of Monitoring Measures

The table of Monitoring Measures is a consolidated list of routine and regular tasks that are undertaken at the ANE Facility and Orica's Kurri Kurri Technical Centre, Richmond Vale, to ensure the health and safety of the environment and all personnel at the site.

The table is divided into routine inspections and regular testing/servicing tasks.

The table is derived from mitigation measures outlined in the following documents in place at the ANE Facility:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Emergency Plan: Revision 11, 02/12/2016 (Orica);
- Orica ANE Production Facility Road Transport Protocol Rev D (Orica, 2019) (Operational RTP),
- Biodiversity Offset Area Vegetation Management Plan Rev 3 (Umwelt, 2018);
- Operational Soil and Water Management Plan for Ammonium Nitrate Emulsion Production Facility (Umwelt, 2012);
- Inspection checklists (EMS Appendix H):
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the *NSW National Parks and Wildlife Act (1974)* and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Notes to the table:

- ANE Facility Manager - Manager responsible for the operation and management of the ANE Facility; and
- Technical Centre Manager - Manager responsible for the whole of the Orica Richmond Vale site.

Routine Site Inspections / Ongoing Site Checks (Is it in Place?)

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Daily Routine Inspections and Ongoing Site Checks					
General Housekeeping.	<p>Undertake daily housekeeping inspection and record results in accordance with the "Shift Pre Start and Housekeeping Checklist" (Appendix H).</p> <p>The following areas are to be checked</p> <ul style="list-style-type: none"> • Bund areas; • General areas; • Site security; • Plant alarms; and • Critical pumps. <p>Plant recording is required for:</p> <ul style="list-style-type: none"> • Rainfall; • Storm harvester; and • Water test results. 	Daily.	ANE Operational Staff	"Shift Pre Start and Housekeeping Checklist".	Whole Checklist.
Firewater Tanks.	Check firewater tank levels. Minimum of 200,000 litres to be retained for firefighting.	Check water level in tank daily.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
				Environmental Aspects Register.	1.1 and 8.1
	Check connections for water tanks so Rural Fire Service tankers can refill.	Monthly	Technical Centre Manager	Environmental Aspects Register.	1.1
Water Quality and Management.	Check no obstructions to site water flow and segregation of clean water runoff, stormwater and process water from process areas, non-process areas, and surrounding areas.	Monthly	SH&E team representative.	Soil and Water Management Plan.	5.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Ensure there is no blockage of pipes or pits for the stormwater containment system. Maintain all bunds around processing area.	Daily and after each rainfall event.	SH&E team representative.	Soil and Water Management Plan.	6.1
	Maintain bund surrounding hydrocarbon tank loading and storage area. Ensure prompt and full removal of any material which has collected in the sump provided within the bunded area to maintain sump capacity.	Daily.	SH&E team representative.	Soil and Water Management Plan.	6.1
Chemical Storage Areas.	Maintain chemical storage areas in a clean and usable condition. Check for cleanliness, usable condition, leaks.	Daily.	ANE Facility Manager ANE operational staff.	Environmental Aspects Register.	1.2 and 1.3
	Check chemical storage containers are in good working order and contents clearly marked. Check for cleanliness, usable condition, leaks.	Daily.	ANE Facility Manager ANE operational staff.	Environmental Aspects Register.	1.2
	Check bund level and cleanliness of bunded areas.	Daily.	ANE operational staff. ANE Facility Manager.	Environmental Aspects Register.	1.3 and 5.1
	Maintain all bunds around processing area to ensure capacity and ensure bunds comply with all relevant legislation.	Daily.	Site Safety/Environment Representative or ANE Site Manager	Soil and Water Management Plan.	6.1
Traffic Management.	Check speed limits and parking areas are clearly signposted, signs are in place, and visible.	As required.	ANE Facility Manager.	Environmental Aspects Register.	2.1
Site Security.	Check all security measures (security fence, security cameras, controlled entry, and security procedures) are in place and functioning.	Daily.	ANE Facility Manager. ANE operational staff	Environmental Aspects Register.	10.1
Vehicle Access and Roads.	Check all access crossings and driveways are in good order for the life of the development.	Ongoing. In accordance with	ANE Facility Manager and	The Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 7

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Maintain new site access points, internal roads and parking associated with the ANE facility in accordance with the latest versions of the Australian Standards AS 2890.1:2004 and AS 2890.2:2002 or as otherwise agreed by Council.	the Australian Standards.	Technical Centre Manager.	Response to Submissions.	Table 2.1
	Maintain sealed site access road and unbunded plant hardstand areas and repair as required.	Ongoing. In accordance with the Australian Standards.	ANE Facility Manager and Technical Centre Manager.	Soil and Water Management Plan.	6.1
Plant and Equipment	Check plant and equipment is in good working order, and that there is no damage or other condition occurring that could affect noise levels. Maintain and operate in a proper and efficient condition all plant and equipment installed at the premises or used in connection with the licensed activity (in accordance with manufacturers guidelines for each item of plant or equipment). Plant shall be checked for leaks, damage, and good order.	Daily.	ANE operational staff.	EPL 4121.	O2.1
				The Project Approval (09_0090) (as modified).	Schedule 2, Cndtn 12
				Environmental Aspects Register.	2.3, 3.1 and 4.1
Pedestrians.	Check that all pedestrians wear high visibility clothing.	Regular visual checks/	ANE operational staff.	Environmental Aspects Register.	2.1
Vehicle Parking.	Check that all unattended vehicles are parked in designated parking areas.	Regular visual checks/	ANE operational staff.	Environmental Aspects Register.	2.1
Weekly Routine Inspections					
Emergency Preparedness.	Check Emergency Spill Kits. Undertake visual inspection to confirm kits appropriately stocked and located.	Weekly or after use.	ANE operational staff ANE Facility Manager.	Kurri Kurri Emergency Plan.	General reference throughout doc.
				Environmental Aspects Register.	1.2
				Soil and Water Management Plan.	6.1
Water Quality and Management.	Maintain surface water diversion channels and underground drains to prevent scour, erosion and sedimentation. Undertake	Weekly.	SH&E team representative.	Soil and Water Management Plan.	5.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	visual inspection to ensure no obstructions to drains and to detect any signs of erosion.				
Waste Management.	Check that any waste produced on site is taken to the appropriately labelled storage bin.	Weekly.	ANE operational staff. ANE Facility Manager.	Environmental Aspects Register.	6.1
Garden areas.	Maintain and check "Landscaped" areas at the ANE Facility and Technical Centre site to ensure they are tidy and weed-free.	Weekly.	ANE Facility Manager.	Environmental Aspects Register.	7.2
Monthly Routine Inspections					
General Housekeeping.	Undertake a monthly housekeeping inspection and record observations and actions in accordance with the "Monthly Housekeeping Audit Inspection Checklist" (refer Appendix H) in order to maintain a high standard and keep combustible materials (pallets, paper, plastics, and cardboard) minimized in process areas and in proximity to oxidizers and fuels. The following work areas are to be inspected: <ul style="list-style-type: none"> • Ammonium Nitrate Storage Area; • Ammonium Nitrate Emulsion Storage Area; • Raw Material Storage Area; • Fuel Storage Area; • Site General (e.g. Workshop, office, laboratory). 	Monthly.	ANE Facility Manager.	"Monthly Housekeeping Audit Inspection Checklist".	Whole Checklist
Bushfire Hazard Reduction / Preparedness.	Check leaf guards on all buildings and clear as required.	Check leaf guards monthly.	Technical Centre Manager.	Response to Submissions.	3.6.1
	Inspect Technical Centre. Regular program of inspection to be undertaken by the Rural Fire Service.	To be determined (regular inspection).	Rural Fire Service. ANE Facility Manager to ensure it happens.	Response to Submissions.	3.6.1
Waste Management.	Check that any waste produced on site is taken to the appropriate licensed facility.	Monthly via receipt of report from waste contractor.	ANE Facility Manager.	Environmental Aspects Register.	6.2
Stormwater Management.	Monthly inspections of stormwater management measures are to be undertaken by the ANE Facility Manager	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Regular maintenance of all erosion and sediment controls.	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.3
	The sediment levels in the structures and the need for de-silting will be determined through a visual assessment as part of the regular inspections. Material accumulated by erosion and sediment control structures is to be removed when it reaches 50% of the height. If the inspections identify that the type, location or condition of the control structures are ineffective, the control structure will be modified, repaired or replaced in consultation with the Environmental Representative as soon as practicable.	Monthly.	ANE Facility Manager.	Soil and Water Management Plan.	5.3
	Monitor vegetation along access road in grass lined swales and grassed buffer strips to ensure no erosion is occurring. Ensure no blockages of pipes or pits carrying runoff and remove accumulated materials if blockages occur. Monitor geo-fabric lined rock channels to ensure no erosion is occurring, and remove any deposited materials (e.g. sedimentation).	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
	Monitor scour protection installed at the outlets of the access road culverts to ensure it is adequate for the erosion potential of the water. If damage is occurring, extend or improve existing scour protection area. Remove any accumulated material from within the scour protection area.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
	Regular inspection of the downstream overland flow paths, following discharge events, to ensure that discharged stormwater does not increase the erosion and scouring of surface material. If areas of scouring are identified, appropriate remediation measures will be implemented.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.2
	Regularly inspect rock lined level spreaders at the stormwater discharge points and clear sediment as required.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Clean Water Diversion	Regular inspection of clean water diversions, especially following rainfall events. Carry out repairs as required ensuring they remain in good working condition.	Monthly and after each rainfall event.	ANE Facility Manager.	Soil and Water Management Plan.	6.1
Tanks	Ensure all tanks are regularly inspected and replaced or repaired should deterioration be observed.	Monthly.	ANE operational staff.	Soil and Water Management Plan.	6.1

Periodic Testing / Servicing / Maintenance of Equipment (Is it working?)

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weekly Testing					
Weekly Site Alarms, Fire Panel and Emergency Communications.	Test the Site Emergency Alarm – Early Warning Intercom System (EWIS).	The EWIS is tested on Monday at 10.00 am.	The front desk receptionist.	Kurri Kurri Emergency Plan.	8.8
	Test the thunderstorm alert.	Test weekly each Monday at 10.00 am.	The front desk receptionist conducts weekly test as part of testing the EWIS.	Kurri Kurri Emergency Plan.	5.2.13
	Test site emergency radios.	Radios are tested each Monday as part of the emergency alarm testing.	The Front desk receptionist.	Kurri Kurri Emergency Plan.	8.9.1
	Test site Fire Indicator Panel and backup. <i>Note: fire system infrastructure is maintained under contract with a third party service provider. Maintenance and testing is undertaken to comply with applicable statutory requirement.</i>	Test for operation and reset weekly each Monday at 10.00 am.	The front desk receptionist conducts weekly test as part of testing the EWIS.	Kurri Kurri Emergency Plan.	8.8
Safety Showers.	Check safety showers in all plants.	Every two weeks.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Monthly Periodic Testing					
Front Gate.	Check site boom gate entry warning lights are operational.	Monthly.	Kurri Kurri Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check mimic panel front gate.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check occupancy report front gate.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
Monthly Fire Panel Test.	Test for operation of site Fire Indicator Panel and backup. <i>Note: fire system infrastructure is maintained under contract with a third party service provider. Maintenance and testing is undertaken to comply with applicable statutory requirement.</i>	Monthly during the last week on the month.	Contractor undertakes monthly test.	Kurri Kurri Emergency Plan.	8.8
Smoke Detector.	Test smoke and thermal detectors.	Monthly.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
First Aid Equipment.	<i>Note: First aid equipment is maintained under contract with third party service provider.</i>	Not required.	Technical Centre Manager to ensure contract in place and contractor provides service.	Kurri Kurri Emergency Plan.	12.2
Waste Water System.	Undertake periodic maintenance on the waste water system in accordance with the "Envirocycle Maintenance Checklist" (refer Appendix H).	Monthly	Qualified contractor under instruction from the ANE Facility Manager.	"Envirocycle Maintenance Checklist".	Whole Checklist

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	Clean and test "Stormceptor" and maintain waste water system in accordance with "Stormceptor Maintenance Checklist" (refer Appendix H).	Monthly and after rainfall.	ANE Facility Manager.	Environmental Aspects Register.	1.2
				"Stormceptor Maintenance Checklist".	Whole Checklist
Bunded Tanks.	Check and undertake maintenance of bunded tanks in accordance with the "Self-Bunded Tank Maintenance Checklist" (refer Appendix H).	Monthly.	ANE Facility Manager.	"Self-Bunded Tank Maintenance Checklist".	Whole Checklist
Fire Fighting Equipment	Test run of firewater system pumps.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Service of firewater system diesel pumps.	Monthly.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
	Check fire hoses, hydrants and extinguishers. The fire safety equipment is tested and maintained in accordance with relevant code requirements.	Monthly.	Technical Centre site personnel.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
Electrical Supply Check.	Ensure electrical supply is in good operating condition and avoid electrical faults.	Regular. As required by the equipment.	Inspection and maintenance by energy regulator.	Fire Safety Study: Kurri Kurri Technology Centre.	Table 5.4. Point 12
Periodic Testing					
Lighting.	Check all lighting is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network and compliant with the latest version of <i>Australian Standard AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting</i> .	Biennial compliance audit or as required via change.	ANE Facility Manager.	Environmental Aspects Register.	4.2

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Firewater System Hydrant.	Test firewater system hydrant flow.	Once every 3 years.	Contractor. Technical Centre Manager to ensure work is undertaken.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
As required by manufacturer					
Stormceptor	Maintain the trap in the SPEL Stormceptor™ in accordance with manufacturer's specifications and ensure collected waste is removed as required.	As required by manufacturer.	ANE Facility Manager.	Soil and Water Management Plan	6.1

Deliveries and Transport

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Pre-start checks.	Maintenance and pre-start checks will be undertaken in accordance with manufacturer requirements and the National Heavy Vehicle Accreditation Scheme requirements.	Prior to commencement of deliveries.	Driving Contractor.	Road Transport Protocol.	1.3
Truck Movements.	Monitoring of truck movements will be undertaken to ensure drivers adhere to the designated haulage route as required by the Driver Code of Conduct and transport route risk assessment. Monitoring will include the use of a GPS system which will be fitted to each vehicle used in deliveries to and from the site. Drivers found to be non-compliant may be subjected to Orica's disciplinary process or prevented from delivering to the site in the case of contract delivery drivers.	Periodic.	ANE Facility Manager and Haulage Contractor.	Road Transport Protocol.	2.3 and 3.2
Driver compliance with Code of Conduct.	Monitoring of haulage contractors will be undertaken to ensure drivers are complying with the requirements of the Driver Code of Conduct as outlined in the Operational RTP	Periodic.	ANE Facility Manager	Road Transport Protocol.	2.3

Bushland Hazard Reduction

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weekly Tasks					
Access Road Clearance.	Check access road clearance and maintain a minimum 4 metre vertical clearance to any overhanging obstructions including tree branches along the access road.	Weekly.	Technical Centre Manager.	Environmental Aspects Register (Recommendations of the "Bushfire Threat Assessment" included in the EA)	1.1
Monthly Tasks					
Vegetation Clearance.	Manual Hazard Reduction. Maintain a minimum 30 m clear zone of vegetation around perimeter of the plant (designated Asset Protection Zones) in accordance with the relevant NSW Rural Fire Service Planning for Bushfire Protection 2006 Guidelines.	Monthly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
				Environmental Aspects Register (Recommendations of the "Bushfire Threat Assessment" included in the EA).	1.1 and 8.1
	Ensure low fuel zones up to 60 m from facilities including lawns, planted garden strips, roads and pathways.	Regularly.	Technical Centre Manager.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Fire Trails	Check fire trails.	Monthly. Increasing frequency during fire season.	Trained Technical Centre site personnel.	Fire Safety Study: Kurri Kurri Technology Centre.	5.4.1 and 8.2
				Response to Submission.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1
Bushfire Inspection.	Undertake bushfire inspection and record results in accordance with the "Bush Fire Precautions Checklist (Red Book)" (refer Appendix H). The following tasks are to be undertaken: <ul style="list-style-type: none"> • Raking or manual removal of fine fuels; • Mowing grass; • Slashing and trittering; • Removal or pruning of trees and shrubs; • Check condition of firebreaks; • Ensure Asset Protection Zone is maintained as per the Bush Fire Management Plan; • Ensure standing timber within 15 metres from magazines is trimmed, lopped or removed. 	Monthly. <i>Note: the Bush Fire Precautions Checklist currently states tasks to be undertaken 3-monthly. The checklist is to be updated to monthly.</i>	Technical Centre Manager.	"Bush Fire Precautions Checklist (Red Book)".	Whole Checklist.
Yearly Tasks					
Back Burning.	Periodic back burning. The continuation of regular controlled hazard reduction and backburning operations undertaken by the Rural Fire Service.	Yearly. Timing and location as advised by the Rural Fire Service.	Rural Fire Service. Technical Centre Manager to ensure it happens.	Fire Safety Study: Kurri Kurri Technology Centre.	8.2
				Response to Submissions.	3.6.1
				Final Hazard Analysis. Orica Australia. Document No: J20210-007.	5.4.1

Maintenance of the Conservation Area

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Weed Control	<p>Undertake a periodic weed control program to control weeds and non-indigenous flora in the Conservation Area using the following appropriate control methods:</p> <ul style="list-style-type: none"> • Use Glyphosate based herbicide by direct application to cut surfaces (cut and paint or scrape and paint methods); • Spraying of Glyphosate based herbicide can be performed (only according to the directions on the label) and ensuring that off-target damage is minimised; • Use appropriate control measures as recommended in the Department of Industry and Investment <i>Noxious and Environmental Weed Control 4th Edition 2009</i> or equivalent replacements for control of weeds, ensuring minimal off target damage; • Remove weeds by hand ensuring that all plant parts which can reproduce are removed and that soils do not become prone to erosion; • Other weed control methods may be undertaken with prior written permission of the Director-General. 	To be determined. Ensure control programs are commenced when timing and extent of weed removal will minimise adverse effects on wildlife (weeds may provide protection or habitat for native fauna).	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1a
	<p>Control of the class 3 and 4 weeds (blackberry, bitou bush and lantana) is required to control the growth and spread of the weed to the extent specified by the LCP using the following control measures:</p> <ul style="list-style-type: none"> • The plant must not be sold, propagated or knowingly distributed; • The plant must be prevented from flowering or seeding; • The plant material must be prevented from spreading through movement and/or transport by any means; • The plant must be prevented from growing within 10 metres of a property boundary or watercourse. 	Ongoing.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.2
	Continue to check the Conservation Area for weed invasion and regrowth and treat any outbreaks. Check adjacent areas	Monthly.	Technical Centre Manager.	Conservation Agreement (between the Minister	Annexure C, Item 1a

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	and gardens for invasive plant species and remove, or control their spread.			Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale'.	
	<p>Within approximately three months of the initial weed control effort an inspection by the bush regeneration specialist in the areas currently known to contain weeds (refer to Figure 4.1 of the VMP) will be undertaken to monitor and determine the success of the initial weed control effort and identify any new weed occurrences within the Biodiversity Offset area.</p> <p>In addition to these objectives the inspection will also include a walkover inspection and general walking transects through the Offset area to determine whether any weed species are establishing in new areas.</p>	Within 3 months of the initial weed control effort.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3.1
	<p>Following the first three monthly inspection, the timing for the next weed control effort and the areas of the conservation area that are to be the focus of weed control activities will be agreed with the bush regeneration specialist. For example, if there is still significant weed density the next inspection and weed control effort may be undertaken in 3 months' time, however if the weed density has been significantly reduced then the frequency may be decreased to six months. Follow-up weed control activities will then be undertaken in the areas identified during this inspection as requiring additional maintenance activities.</p>	Within 4 months of the initial weed control effort.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3.1
	<p>An annual weed control program across the Biodiversity Offset Area to target noxious weeds will be undertaken in accordance with the Industry and Investment NSW Noxious and Environmental Weed Control Handbook 5th Edition 2011 including:</p> <ul style="list-style-type: none"> Control of weeds in accordance with relevant legislation; 	Annually.	Suitably qualified bush regeneration specialist.	Vegetation Management Plan.	4.4.3

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	<ul style="list-style-type: none"> The use of glyphosate based herbicide by direct application to cut surfaces (cut and paint or scrape and paint methods); Spraying of relevant herbicide when favourable conditions prevail; Removal of weeds by hand ensuring that all plant parts which can reproduce are removed; Monitoring and inspections of areas to assess the effectiveness of the weed control program and to ascertain the requirement for further work; and Ongoing consultation with the relevant authorities regarding weed listings, weed occurrence and management technologies. 				
	Monitoring of the success of weed control activities and weed occurrences within the Biodiversity Offset Area will be undertaken through walkover inspections of areas known to contain well as general walking transects through the offset area to determine whether any weed species are establishing in new areas. The results of the inspections will determine the level of weed control required and the areas to be the focus of weed control activities.	<p>Every six months (preferably prior to any planned control works).</p> <p>The frequency may be reduced to annual as the occurrence and density of weed species continues.</p>	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1
Pest Animals	<p>Monitor impacts to the Conservation Area by pest animals and undertake on-going control programs for pest animals if appropriate.</p> <ul style="list-style-type: none"> Methods for monitoring pest animal activity can include: <ul style="list-style-type: none"> Observations and/or hearing calls; The use of standard "sand plots"; The use of non-poisoned "bait stations"; Scat counts; and Other quantitative techniques which can be designed in discussion with the Environment, 	Ongoing.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1b

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	<p>Energy and Science Group, DPIE or the Livestock Health and Pest Authority.</p> <ul style="list-style-type: none"> Methods for control can include shooting, trapping and use of poisonous baits consistent with advice from the Environment, Energy and Science Group, DPIE and the Livestock Health and Pest Authority. 				
	Participate in community pest animal control programs, and encourage neighbours to implement pest animal control programs. Contact your local National Parks office to find out if community control programs are occurring in the area.	TBD. Contact National Parks on an annual basis to determine if there are community control programs in the area.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1b
Native Animals	Monitor numbers and reduce the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation with the Conservation Area and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the <i>National Parks and Wildlife Act 1974</i> .	Ongoing visual checks.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1c
Ecological Monitoring	Baseline monitoring is to occur at the four monitoring points specified within the Vegetation Management Plan. Monitoring requirements are specified in the Vegetation Management Plan (section 5.1).	Initial baseline monitoring to occur by March 2012.	Technical Centre Manager.	Vegetation Management Plan.	5.1.1
	In accordance with the monitoring protocol in the Vegetation Management Plan, the ecological monitoring will be undertaken annually for five years, with a review of the monitoring frequency required to be undertaken in the fifth year.	Annually for five years.	Technical Centre Manager.	Vegetation Management Plan.	5.1.2.3

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
	<p>The review of the monitoring frequency will be undertaken in consultation with the Environment, Energy and Science Group, DPIE.</p> <p>Details of flora and fauna monitoring is set out in the Vegetation Management Plan (section 5).</p> <p>Qualitative monitoring of management issues will be undertaken using the monitoring report form included in Appendix 2 of the Vegetation Management Plan.</p>				
Fire Hazard Reduction.	<p>Undertake fire hazard reduction to protect the natural assets of the Conservation Area, in appropriate locations, with any required approvals and/or permits using:</p> <ul style="list-style-type: none"> • Raking and hand clearing; • Pile burning; and • Fuel reduction burns. <p>Ensure:</p> <ul style="list-style-type: none"> • Both live and dead trees with hollows are protected from burning to preserve nesting habitat for hollow dwelling animals; and • Where possible, fallen and dead timber are protected from burning to preserve fauna habitat. 	<p>Recommended timing for fire hazard reduction burns and controlled burning:</p> <ul style="list-style-type: none"> • In Wet Sclerophyll Forest vegetation, acceptable fire intervals are 25 to 60 years. Crown fires should be avoided in the lower end of this range. • In Sclerophyll Grassy Woodland vegetation, acceptable fire intervals are 5 to 50 years. Crown fires should be avoided in the 	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1e and 1f

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		lower end of this range.			
Revegetation (if doing)	<p>If undertaking revegetation to establish indigenous plants to maintain the vegetation structure in keeping with the identified vegetation community:</p> <ul style="list-style-type: none"> Revegetate using species produced from material sourced locally and without fertilisers, where: <ul style="list-style-type: none"> The ability to regenerate naturally within a reasonable time frame has been lost, or To prevent soil erosion. Revegetation methods can include: <ul style="list-style-type: none"> Planting; Brush mulching; and Direct seeding. 	To be determined if undertaking revegetation.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	Annexure C, Item 1k
Sediment Control.	Control and prevent further erosion along tracks, trails, and watercourses within the conservation area.	Carry out sediment and erosion control works within streams and on water front land in consultation with the Environment, Energy and Science Group, DPIE and in accordance with a Controlled Activity Approval under the <i>Water Management Act 2000</i> or subsequent Act.	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the <i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale').	2.9 and Annexure C, Item 1q
Photograph Conservation Area.	Take photographs at the identified photo-points indicated in the Conservation Agreement for the purposes of ongoing monitoring of the conservation values.	From time to time in consultation with officers of the Environment,	Technical Centre Manager.	Conservation Agreement (between the Minister Administering the	Annexure C, Item 1t

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		Energy and Science Group, DPIE.		<i>NSW National Parks and Wildlife Act (1974)</i> and Orica Australia for 'Orica Richmond Vale'.	
Access	Illegal access to the area will be monitored periodically and if the signage is not effective in deterring the illegal use Orica will design and implement additional measures in consultation with the Environment, Energy and Science Group, DPIE.	Periodically.	Technical Centre Manager.	Vegetation Management Plan.	4.2

Noise Monitoring

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Noise Monitoring	Monitor for compliance with noise limits at the nearest potentially affected residence. Monitor at the most affected point within the residential boundary, or at the most affected point within 30 m of the dwelling where the dwelling is more than 30 m from the boundary. Noise limits are stipulated in the Project Approval and EPL 4121. Investigations will be undertaken in response to any concerns raised by the community regarding traffic noise associated with the Project.	Monitoring as required.	ANE Facility Manager.	Response to Submissions.	Table 2.1
				Environmental Aspects Register.	3.1
				EPL 4121.	L4 and M4

Safety during Construction

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
Hazard Identification	Identify all hazards arising from the potential interaction of construction works associated with the Modifications and the existing operations which are related to Schedule 15 materials identified in the WHS Regulation.	Prior to the commencement of construction works associated with respective modifications	ANE Facility Manager.	Project Approval (as modified).	Schedule 3 Cndtn 6A and Cndtn ^D

Aspect	Monitoring Measure	Timing	Responsibility	Source Doc.	Section
		(MOD 1 and MOD 2).			
	Implement all necessary control measures to reduce the risks from those hazards to as low as reasonably practicable.	During construction works associated with respective Modifications (MOD 1 and MOD 2).	ANE Facility Manager.	Project Approval (as modified).	Schedule 3 Cndtn 6B and Cndtn 6E
	Ensure that the safety aspects of all construction works associated with the modifications are carried out in accordance with the existing Safety Management System for the site.	During construction works associated with respective Modifications (MOD 1 and MOD 2).	ANE Facility Manager.	Project Approval (as modified).	Schedule 3 Cndtn 6C and Cndtn 6F
Hazards	Consult with the Major Hazards unit of SafeWork NSW with regard to the safety systems to be incorporated into the modification, and incorporate the safety measures to the satisfaction of SafeWork NSW.	During construction works associated with MOD2. (SafeWork NSW was consulted prior to detailed design).	ANE Facility Manager.	Project Approval (as modified).	Schedule 3 Cndtn 29.

Appendix J

Summary of Auditing

Appendix J Summary of Auditing and Assessment

The below table is a summary of auditing requirements from the following documents:

- Project Approval 09_0090 (as modified) (EMS Appendix A);
- EA Table of Commitments (refer EMS Appendix A);
- Environmental Aspects Register (EMS Appendix B);
- Plant induction and assessment (EMS Appendix C and Appendix D);
- Kurri Kurri Emergency Plan: Revision 11, 02/12/2016 (Orica);
- Inspection checklists (EMS Appendix H);
- EPL 4121 (Licence version date: 2-Oct-2019);
- Response to Submissions (Umwelt, March 2010);
- Final Hazard Analysis. Orica Australia. Document No: J20210-007, Rev 0, 24 February 2011 (Sherpa Consulting);
- Fire Safety Study: Kurri Kurri Technology Centre. Rev 3, 14 September 2011 (Sherpa Consulting);
- Conservation Agreement (between the Minister Administering the *NSW National Parks and Wildlife Act (1974)* and Orica Australia for 'Orica Richmond Vale'), 2011.

The table should be read in conjunction with these management plans and site documents.

Summary of Auditing and Assessment

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Traffic Audit.	Commission a suitably qualified person, whose appointment has been approved by the Director-General, to conduct an Independent Traffic Audit of the development as per the requirements of Schedule 3, Condition 11 of the Project Approval.	Within six months of the commencement of operation of the ANE Facility, and every three years thereafter, unless the Director-General of DPIE directs otherwise.	ANE Facility Manager.	The Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 11
Transport Route and Risk Assessment.	Carry out a Transport Route Risk Assessment for the alternate route identified for transport of the ANE product.	To be determined.	Technical Centre Manager and ANE Facility Manager.	Road Transport Protocol.	2.3
Hazard Audit.	Carry out a comprehensive Hazard Audit of the site and within one month of each audit submit a report to the Director-General of the DPIE as per the requirements of Schedule 3, Condition 5 of the Project Approval.	Twelve months after the commencement of operations and every three years thereafter or at such intervals as the Director-General of the DPIE may agree.	ANE Facility Manager.	The Project Approval (09_0090) (as modified).	Schedule 3, Cndtn 5
Emergency Procedure Guide.	Check each vehicle carries an emergency procedure guide which summarises the actions to be undertaken in the event of a vehicle fire and also a guide for each type of product being carried in accordance with Dangerous Goods requirements.	Random as required and as per Biennial audit.	ANE operating staff	Response to Submissions.	Table 2.1
				Environmental Aspects Register.	2.2
Energy Efficiency Opportunities.	Undertake a Biennial Compliance Audit to check Orica is implementing energy efficiency opportunities as described in the EA.	Biennially.	ANE Facility Manager.	Environmental Aspects Register.	6.3

Aspect	Requirement	Timing	Responsibility	Source Doc.	Section
Independent Environmental Audit.	Commission an Independent Environmental Audit of the Project as per the requirements of Schedule 4, Condition 4 of the Project Approval.	Within two years of the commencement of operations of the ANE Facility, and every three years thereafter, unless the Director-General of the DPIE directs otherwise.	ANE Facility Manager.	The Project Approval (09_0090) (as modified).	Schedule 4, Cndtn 4
Weed Control.	The annual weed control program will be reviewed following each ecological monitoring event of the Biodiversity Offset Area and where required modified to address any noxious or significant weeds that have not been discussed in the VMP or any newly established weed infestations.	Annually.	Technical Centre Manager.	Vegetation Management Plan.	4.4.3.1
Hazards	Update the current Major Hazard Facility Safety Case for the facility and provide relevant information of SafeWork NSW.	Submitted to SafeWork NSW on 5 May 2017	Technical Centre Manager.	Project Approval (as modified)	Schedule 3 Cndtn 4.1