



Kooragang Island ENVIRONMENTAL MANAGEMENT SYSTEMS MANUAL

Appendices

Issued: September 2022

Version: 10

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DOCUMENT CONTROL

DOCUMENT TITLE

Kooragang Island Environmental Management Plan

DOCUMENT LOCATION

[Orica Kooragang Island Opentext DMS](#) – ie. Opentext folder address:
Orica\MFG Site Kooragang Island\Safety, Health, Environment and Security\Environment

DOCUMENT OWNER

Senior Environmental Specialist – Nathan Robinson

VERSION (EMP)

Revision	Date	Author	Reviewed	Approver	Details
10	1/9/2022	N.Robinson	N Robinson	P Cunsolo Snr Manager - SHES	Reviewed with general updates. Updated in response to DPIE comments dated 20 August 2021
9	04/06/2020	D Williams	N Robinson	A Taylor Snr Manager - SHES	Reformatted to align with Orica Environmental Management Plan Group Template, satisfy requirements of the OEMP (49B of consent) and general updates
8	30/8/2019	N Robinson	S Woodroffe	A Taylor Snr Manager - SHES	Reformatted to align with Orica Environmental Management Plan Group Template and general updates
7	20/06/2019	Z Cox	S Woodroffe	A Taylor Snr Manager - SHES	Reviewed and updated licence dates, legislation and environmental improvements
6	30/09/2017	R Gothard	A Taylor	S Woodroffe SHR Lead	Reviewed and updated licence dates
5	4/11/2016	S Woodroffe	A Taylor	S Woodroffe E&C Manager – Kooragang Island	Updated licence dates
4	26/09/2016	S Woodroffe	A Taylor	S Reid Site Manager – Kooragang Island	Updated to include Waste Management Plan
3	3/02/2016	S Woodroffe	S Woodroffe	S Reid General Manager – Kooragang Island	Updated licences section
2	8/12/2015	A Taylor	S Woodroffe	S Reid General Manager – Kooragang Island	
1	18/11/14	A Taylor S Woodroffe	F Hannaford	G Holmes	

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Appendix 1: Land Impact Review
Land Tenure and History

Start date	Proprietor	Occupier	Land use	Environmentally hazardous chemicals stored on site	Contamination concerns/ major incidents	Known contaminated land	Known contaminated groundwater
1951	NA	NA	Hunter River Islands Reclamation Scheme began (the joining of several islands including Dempsey, Walsh & Moscheto Islands) to become Kooragang Island. Fill for the reclamation project was provided from Newcastle ports dredging project	NA	NA	No	No
1963	Minister for Public Works, NSW	NA	Land Reclamation works	NA	NA	No	No
1967	Minister for Public Works, NSW	Imperial Chemical Industries	Construction of the Eastern Nitrogen fertiliser plant commenced at the site.	Nitrogen	NA	No	No
1969	Minister for Public Works, NSW	Imperial Chemical Industries	Nitric acid and ammonium nitrate manufacture at the site commenced in February 1969. Ammonia manufacture commenced in November 1969. Imperial Chemical Industries was the major shareholder.	<ul style="list-style-type: none"> • Nitric acid • Ammonia • Ammonium Nitrate 	<ul style="list-style-type: none"> • Arsenic • Ammonia • Nitric Acid 	Yes	Yes

1969, June	Australian Fertilisers	Australian Fertilisers	In June 1969 Australian Fertilisers acquired the site and incorporated it into the Australian Fertilisers site to the north.	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
1972	Australian Fertilisers	Australian Fertilisers	No. 1 Ammonium Nitrate Plant was upgraded to enable production of both industrial and fertiliser grade ammonium nitrate.	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
1978	Eastern Nitrogen Ltd (ENL)	Eastern Nitrogen Ltd (ENL)	Eastern Nitrogen acquired the land from Public Works NSW	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
1987	Eastern Nitrogen Ltd (ENL)	Eastern Nitrogen Ltd (ENL)	Eastern Nitrogen Ltd (ENL) was a wholly owned subsidiary of Incitec Ltd which is majority owned by ICI Australia Limited. (Incitec Ltd was known as AFL Holdings Ltd until 30 Sept 1987)	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
1989	Eastern Nitrogen Ltd (ENL)	Eastern Nitrogen Ltd (ENL)	No. 2 Nitric Acid Plant and No. 2 Ammonium Nitrate Plant commenced operation	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
2003	Orica Australia Pty Ltd	Orica Australia Pty Ltd	Orica Australia Pty Ltd commenced ownership of the site operations.	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes
2004	Orica Australia Pty Ltd	Orica Australia Pty Ltd	No. 3 Nitric Acid Plant commenced operation.	<ul style="list-style-type: none"> Nitric acid Ammonia Ammonium Nitrate 	<ul style="list-style-type: none"> Arsenic Ammonia Nitric Acid 	Yes	Yes

2010	Orica Australia Pty Ltd	Orica Australia Pty Ltd	Orica IC Assets Pty Ltd commenced ownership of the land.	<ul style="list-style-type: none"> • Nitric acid • Ammonia Ammonium Nitrate	<ul style="list-style-type: none"> • Arsenic • Ammonia • Nitric Acid 	Yes	Yes
2011	Orica Australia Pty Ltd	Orica Australia Pty Ltd	Ammonia plant expanded production to approximately 1000 tonnes per day	<ul style="list-style-type: none"> • Nitric acid • Ammonia • Ammonium Nitrate 	<ul style="list-style-type: none"> • Arsenic • Ammonia • Nitric Acid 	Yes	Yes

Appendix 1.1 Land Impact Register

Ref.	Environmental event	Location of Impact	Year/s	Contaminants of Concern	Remedial Actions	Remediation Complete (Y/N) and Date
1	Discharge of arsenic containing water to a pit on the site. This has resulted in arsenic contamination both on and offsite.	Western corner of site - Groundwater	1969-1994	Arsenic	Remediation - Onsite arsenic contamination is being addressed in accordance with a management order.	N
2	Discharge of ammoniated water from the Ammonia Storage Scrubber to groundwater via a subsurface drainage system. This resulted in groundwater contamination both on and offsite.	Groundwater	1969-2005	Ammonia	The discharge to groundwater ceased in 2005 and natural attenuation has addressed the contamination.	Y
3	Ammonia was discharged from a relief valve in the Ammonia Plant, resulting in several people experiencing symptoms. Incitec was prosecuted in the NSW Land and Environment Court (File No. 500039 of 1999)	Air	1998 (10 th June)	Ammonia	NA	NA
4	Effluent with a pH of <1.5 was discharged for 2.15hrs when nitric acid was discharged to the system as a result of a failed valve. Incitec was prosecuted in the NSW Land and Environment Court (File No. 50010 of 2000).	Water	1999 (1st March)	Effluent (Low pH)	NA	NA
5	Effluent with a pH of <2 was discharged for approximately 3.5hrs when nitric acid was discharged to the system following a failure of a heat exchanger. Incitec was prosecuted in the NSW Land and Environment Court (File No. 50049 of 2003).	Water	2002 (12 th July)	Effluent (Low pH)	NA	NA
6	Effluent with a pH <6.2 was discharged to the Hunter River North Arm over two periods, with 683kg of nitric acid discharged	Water - Hunter River (north arm)	2004 (15 th & 16 th July)	Effluent - Nitric Acid	NA	NA
7	A release of low pH water from the site stormwater system occurred following the failure of a weld on a	Water	2010 (19 th October)	Stormwater (Low pH)	NA	NA

	weak nitric acid pipe. The site was prosecuted in the NSW Land and Environment Court (File No. 50919 and 50920 of 2011)					
8	The failure of a steam control valve caused elevated temperatures in the AN1 Evaporator which resulted in the generation of fine ammonium nitrate fume which was observed more than 5km from site. The site was prosecuted in the NSW Land and Environment Court (File No. 50282 OF 2012)	Air	2011 (22 nd March)	Fume (Ammonium nitrate fume)	NA	NA
9	During excavation work in the Ammonia Plant a jackhammer pierced an ammonia drain line, resulting in a discharge of ammonia to air. The site was prosecuted in the NSW Land and Environment Court (File No. 50312 of 2012).	Air	2011 (17 th June)	Ammonia	NA	NA
10	Following changes in the Ammonia Plant during a major plant expansion a release of hexavalent chromium solution occurred when steam condensed and flowed through unreduced High Temperature Shift catalyst, flowed into the vent system and was discharged to air. The site was prosecuted in the NSW Land and Environment Court (File No. 51019 and 51029 of 2011).	Air	2011 (8 th August)	Hexavalent chromium solution	NA	NA
11	Ammonia was released from the No. 1 Ammonia Feed Tank, via a high point vent, during batch filling activities from V101. The incident resulted in workers at Mayfield East being affected by the ammonia. The site was prosecuted in the NSW Land and Environment Court (File No. 51110 and 51111 of 2012).	Air	2011 (9 th November)	Ammonia	NA	NA
12	Weak ammonium nitrate was discharged to ground from the WANS filtration plant following a fault with the DCS. The site was prosecuted in the NSW Land and Environment Court (File No. 51164 of 2012).	Groundwater	2011 (7 th December)	Ammonium nitrate solution		
13	Ammonia was released from the ammonia plant as a result of elevated pressure in the refrigeration loop. The ammonia odour affected workers on Heron Rd, adjacent to Orica's site. The EPA commenced proceedings in the NSW Land and Environment	Air	2013 (11 th March)	Ammonia	NA	NA

	Court, however they were subsequently withdrawn prior to the contested hearing.					
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Appendix 2: Legal Compliance Summary

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
Licences					
Environmental Licence	NSW EPA	No. 828	2003 (to Orica)	N/A	OEL9011272 (KIW-1021)
Major Hazard Facility*	Safework NSW	20-17-75	11/11/2021	11/11/2026	OEL44295776 (KIW-3782)
Licence to Manufacture Explosives and Security Sensitive Dangerous Goods*	SafeWork NSW	XMNF100001	N/A	26/06/2026	OEL (KIW-3531)
Notification of Dangerous Goods	SafeWork NSW	Acknowledgement No. NDG015329	5/09/2021	N/A	OEL40298331 (KIW-3775)
Anhydrous Ammonia Pipeline Licence Agreement	Port of Newcastle	44400033	1 October 2014	31 October 2044	OEL1966418 (KIW-3467)
Nitric Acid Pipeline	Minister for Energy	Licence 31	31/01/2008	N/A	OEL1964316 (KIW-3147)
Sewerage systems <ul style="list-style-type: none"> • Collection tanks • Transpiration system 	NSW EPA	No. 828	2003 (to Orica)	N/A	OEL9011272 (KIW-1021)
Ammonia Plant Main Cooling tower	Newcastle City Council	NCC-0077-01	1/3/2022	1/3/2023	Sharepoint

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
Ammonia Storage Cooling tower	Newcastle City Council	NCC-0078-01	1/3/2022	1/3/2023	C:\Orica\KI Environment - Documents\Environmental Monitoring\Cooling Towers Water Quality Monitoring\Orica KI - Certificates of Completion\
NAP1 Cooling tower	Newcastle City Council	NCC-0079-01	1/3/2022	1/3/2023	
NAP2 Cooling Tower	Newcastle City Council	NCC-0080-01	1/3/2022	1/3/2023	
NAP3 Cooling Tower	Newcastle City Council	NCC-0081-01	1/3/2022	1/3/2023	
Access agreement – Orica Groundwater monitoring	Port of Newcastle	A644377	1/07/2019	30/6/2024	OEL1937458 KIW-3640
Refrigerant Trading Authorisation	Australian Refrigeration Council Ltd	AU12568		30/07/2020	KIW - 3576
Permit to Import Prohibited Chemicals - MDEA Import	Australian Government	2022/32		28/02/2023	
Consents					
Project Approval – NAP2/AN2	Newcastle City Council	379/87	2 March 1988	N/A	OEL1966383 (KIW-3007)
Project Approval – Industrial Ammonia Plant	Newcastle City Council	685/93	21/04/1994	N/A	OEL1995956

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
Project Approval – NAP3 and AN Uprate	Minister for Urban Affairs and Planning	2/98	15 April 1998	N/A	OEL1965799 KIW-3008
Project Approval – Ammonium Nitrate Expansion Project	Minister for Planning and Infrastructure	08_0129	1 Dec 2009 and variation MOD1 dated 11 July 2012, MOD2 17 December 2014, MOD3 December 2015, MOD 4 13 May 2021, MOD5 29 October 2021	N/A	Consolidated approval in Sharepoint C:\Orica\KI Environment - Documents\Regulatory Compliance\Site Planning Approvals (KIW-1022)
Project Approval – Arsenic Remediation Program	Minister for Planning and Environment	SSD 7831	10 August 2018	N/A	OEL2000132 (KIW-4285)
Voluntary Remediation Agreements/Voluntary Management Proposal					
Voluntary Remediation Agreement – Stage 1	NSW EPA	Complete			CFS
Voluntary Remediation Agreement – Stage 2	NSW EPA				CFS
Voluntary Remediation Agreement – Stage 3	NSW EPA				CFS
Voluntary Management Proposal Stage 4 (Complete)	NSW EPA				OEL1959390 (KIW-1117)
Nutrient Management Order	NSW EPA	20131407	29/04/2014	Revoked	

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
Arsenic Management Order	NSW EPA	20181401	3/08/2018	N/A	OEL1978852 (KIW-3249)
Easements					
Nitric Acid Pipeline Easement	State Property Authority	N/A	14/11/2007		Orica Corporate Property Group
Nitric Acid Pipeline Easement	Cement Australia	N/A			Orica Corporate Property Group
Nitric Acid Pipeline Easement	Newcastle Port Corporation	N/A			Orica Corporate Property Group
Nitric Acid Pipeline Easement	State Rail Authority	N/A			Orica Corporate Property Group
Nitric Acid Pipeline Easement	Sawmillers Exporters Pty Ltd and Newcastle Port Corporation				Orica Corporate Property Group
Nitric Acid Pipeline Easement	P&O Automotive and General Stevedoring				Orica Corporate Property Group
Effluent Pipeline	Roads and Maritime	N/A	1/6/2014	31/5/2034	OEL1996564 (KIW – 3673)
Effluent Pipeline Easement	Port of Newcastle	N/A	1/11/2015		Effluent Pipeline Port of Newcastle Effluent and

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
					Licence Agreements Final - Orica Registered Sublease – (OEL1965234) Effluent Pipeline Port of Newcastle Effluent and Licence Agreements Final - Registration Confirmation - Orica Lease (OEL1965515) Effluent Pipeline Port of Newcastle Effluent and Licence Agreements Final - Orica land easement (OEL1965837) Effluent Pipeline Port of Newcastle Effluent and Licence Agreements Final - DP1202475 (OEL1966420) Effluent Pipeline - Port of Newcastle Effluent and Licence Agreements Final - Orica land lease (OEL1965514)

Requirement	Issuing Authority	Licence / Registration Identifier	Date Issued	Expiry Date	DMS No. (OEL) (old DMS)
Lease Agreement					
Lot 9 Lease agreement	Port of Newcastle	44400157	1/11/2014	31/10/2034	KIW – 3489
Other licences (non-environmental)					
Radio - Land Mobile	Australian Communications and Media Authority	21112/1 21116/1 21117/1 21146/1 1940065/1	30/10/2022	30/10/2022	6 x radio channels https://web.acma.gov.au/rr/register_search.main_page
AICIS Certificate of Registration	Australian Government Department of Health	NIC501063	23/08/2021	31/08/2022	Refer to Enablon Compliance Module – maintained by APA compliance team

Appendix 3: Statement of commitments (Appendix C from 08_0129 Orica Ammonium Nitrate Expansion Project MOD 3)

Issue	Commitment	Timing	Location in document
General	<p>Orica will prepare and implement the following management plans for the project:</p> <ul style="list-style-type: none"> • A Construction Environmental Management Plan (CEMP) and • Operational Environmental Management Plan (OEMP). 	Construction and Operation	This whole document, 4.5
Community Consultation	<p>Orica will continue to consult with community through the implementation of the project through:</p> <ul style="list-style-type: none"> • Phone number • Regular briefings to community via the Reference Group • Information on project Web Page 	Construction and Operation	5.4.1, Orica KI Public Website: (https://www.orica.com/Locations/Asia-Pacific/Australia/Kooragang-Island/Community#.XrzBUGgzY2w)
Odour and Air Quality	<p>Orica will incorporate engineering measures into its plant design to ensure it minimises the impact of the proposed expansion on air quality, including:</p> <ul style="list-style-type: none"> • Catalytic NOx Abatement to reduce NOx in the tail gas of the Nitric Acid Plant No. 4 to a 99 percentile concentration limit of 150ppm NOx. • Air scrubbing and recirculation technology on the new AN Plant No.3 Prill Tower to minimise particulate emissions from the new tower based on a 100 percentile concentration limit for TSP's of 20 mg/m3. • Installation of a Refrigeration Purge Gas Scrubber on the Ammonia Plant to reduce NOx emissions from the Ammonia Plant to a 100 percentile concentration of 250 mg/Nm3 NOx • Scrubbing of ammonia emissions from the Nitric Acid Plant No.4 and Ammonium Nitrate Plant No. 3 during normal plant operation. 	Detailed Design	NA
Odour and Air Quality	As part of its improvement plans for its existing operations, Orica will also continue to investigate options to further reduce particulate and PM ₁₀ emissions from the existing AN Plant No.1 Prill Tower	Ongoing	3.2
	Within the CEMP, Orica will include measures to control dust during construction.	Construction	4.5

Issue	Commitment	Timing	Location in document
Greenhouse Gas	<p>Orica is committed to the maximum practical GHG reduction for its existing and expanded facility as part of its company sustainability goals.</p> <p>Through the course of the expansion project, it is Orica's intention to install N₂O abatement technology on the proposed new nitric acid plant (NAP4) and retrofit technology to the existing nitric acid plants. Such technology is expected to reduce N₂O emissions from nitric acid production by at least 65%.</p>	Detailed Design	NA
Noise and Vibration	Noise and vibration would be managed during construction and form part of the CEMP. The CEMP would include a monitoring program, mitigation options and management practices.	Construction	NA
	As part of the expansion project Orica will design new plant and equipment to result in boundary noise at existing residential properties to be 10dB(A) less than current operations incorporating design measures to minimise the noise impact of new plant.	Design and Operation	4.5, 7.1.7
	Orica will continue to work with EPA to implement the programme to reduce noise emissions from the existing plant based on the existing PRP in the site EPL.	Ongoing	Completed
Hazard and Risk	<p>Orica will implement the following hazard and risk reduction measures by the completion of the Project to reduce the risk profile associated with its operations at Kooragang island.</p> <ul style="list-style-type: none"> Reconfigure bulk ammonium nitrate storage arrangements through storage segregation to reduce the risk associated with the onsite bulk storage. Reconfigure packaged ammonium nitrate storage arrangements including the withdrawal of timber pallets currently used in the store, to further reduce the likelihood of fires in storage areas. Implement additional ammonia detection and isolation systems to reduce the potential quantity released in an ammonia leak. 	Detailed Design	NA
	Orica will undertake a Hazard Analysis of the expanded operations 3 years after completion of the Project to update the hazard analysis contained in the PHA and subsequent FHA.	Operation	NA – Stage 1, 2 and 3 have not yet been implemented.
Parking	Orica will ensure the provision of adequate parking during the construction phase of the Project.	Construction	NA

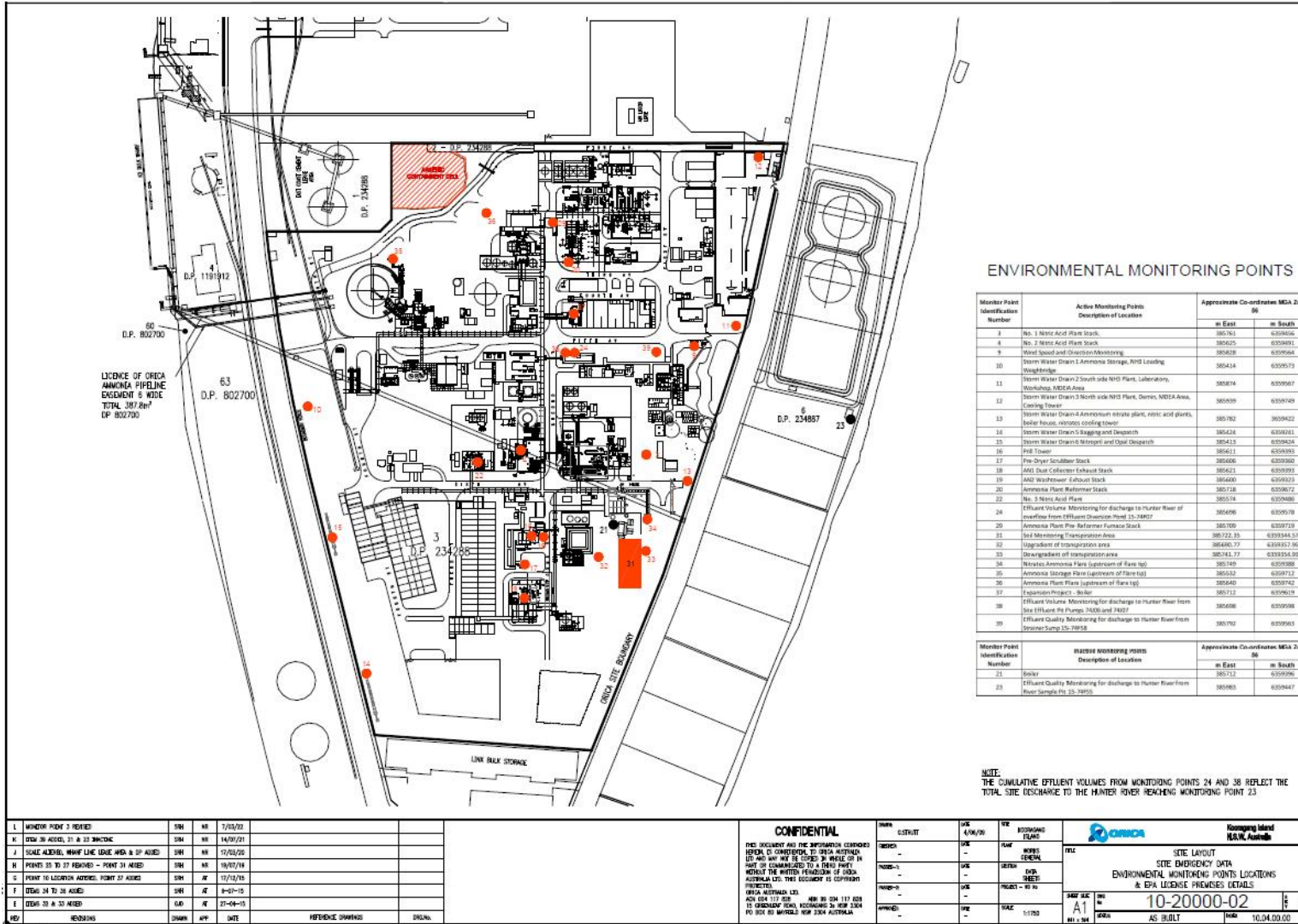
Issue	Commitment	Timing	Location in document
	Orica will ensure the provision of adequate car park facilities for additional staff anticipated for the expanded facility.	Operation	NA – Stage 1, 2 and 3 have not yet been implemented.
Transport	Orica will ensure that the movement of oversized loads to the site during the construction phase are undertaken in accordance with the standard procedures documented by the RTA and appropriate approval from the RTA.	Construction	NA
	Orica will ensure that the detailed design of the new access points will be undertaken in accordance with the relevant standards and guidelines to cater for B-Doubles.	Detailed Design	NA
Surface Water Quality	The CEMP will include requirements for the management of erosion and sedimentation during the construction of the Project.	Construction	NA
	Orica will incorporate measures into the plant design to minimise the generation of contaminated stormwater runoff in the catchments such as bunding, roofing, first flush systems etc. where appropriate.	Detailed Design	NA
Effluent	Orica will ensure effluent recovery measures are integrated into the new plant design, including the use of equipment to minimise water consumption, such as water-limiting devices on ANP3 washdown systems and hoses, mist eliminator pads on Cooling Towers to minimise loss of water droplets from the cooling tower system, and recycling liquid streams within site processes where possible.	Detailed Design	NA
Resource Implications	Orica will also implement design measures to improve the efficiency of resource use including <ul style="list-style-type: none"> • Consideration of water efficiency and recycling in design of new plant • Modification to the Ammonia Plant with a resultant improvement in gas efficiency • Implementation of steam driven compressor trains versus electrical drives where appropriate (i.e. Ammonia Plant modification) • Consideration of optimising energy recovery into a usable form in the Nitric Acid Plant design 	Detailed Design	NA

Issue	Commitment	Timing	Location in document
Soils and Groundwater	<p>Orica will incorporate into the design of the proposal appropriate use of sealed areas, bunding and double containment to minimise the potential for failures that could result in soil and groundwater contamination. All process areas and tanks will be bunded in accordance with relevant Orica and Australian Standards. Plant areas will be classified according to risks to soil and appropriately sealed. The use of underground piping and pits will be minimised and, where unavoidable, secondary containment will be provided for systems that could impact on the environment in the event of a loss of containment</p>	Detailed Design	NA
	<p>The CEMP will detail the measures to be implemented to address potential impacts to soil and groundwater during construction including:</p> <ul style="list-style-type: none"> • A requirement that all excavated soils be tested to identify whether there are contaminants present in the soil. • Require soil testing to be conducted on excavated soils to determine the presence of acid sulphate soils (ASS) or other contaminants. • All construction activities and works will be in accordance with “Managing Urban Stormwater; Soils and Construction” (Landcom, 2004). 	Construction	NA
Visual Amenity	<p>Orica will consider vegetation/screening options along the eastern boundary that can be implemented and maintained in accordance with the onsite Security Plan for the Facility.</p>	Operation	NA – Stage 2 and 3 have not yet been implemented.
Flora and Fauna	<p>The CEMP will include requirements to ensure that sedimentation and erosion from the construction activities are minimised to prevent potential impacts to nearby water bodies and habitat.</p>	Construction	NA
Heritage	<p>The CEMP will include the following requirement in relation to heritage considerations.</p> <p>Any Aboriginal objects that are uncovered during the remediation works should be left undamaged and <i>in situ</i>. Construction works should cease and an assessment be conducted by a qualified archaeologist in consultation with Aboriginal stakeholders and the DECC for direction as to its preservation, historical recording and / or removal if such items are uncovered.</p>	Operation	4.5

Issue	Commitment	Timing	Location in document
Waste	<p>Orica will develop a Waste Management Plan for the new plant detailing the means by which Orica will manage recyclable and waste materials at the site. This will include:</p> <ul style="list-style-type: none"> • Recycling of solid and liquid waste materials where possible. • Classification of all non-recyclable wastes in accordance with DECCS guidelines for waste classification and disposed of to an approved waste disposal facilities by licenced contractors. • Monitoring of recycling and waste disposal systems to assess the overall effectiveness of the plan. 	Operation	4.5, 7.1.9
08_0129 Section 49B Operational Environmental Management Plan – Itemised referencing within this document (EMP/OEMP)			
OEMP submission	a) be submitted to and approved by the Secretary prior to the commencement of operation of each stage of the Project (see Condition 49C for management plan requirements);	Operation	This whole document
Strategic framework	b) provide the strategic framework for environmental management of the Project;	Operation	This whole document
Statutory licenses etc.	c) identify the statutory licences, permits and approval/consents that apply to the Project;	Operation	5
Management plans	d) include a copy of all relevant management plans and monitoring programs under this Project;	Operation	8
Statement of commitments	e) consolidate all relevant management and mitigation measures for the Initial Operations that will continue to be implemented the Project site together with those outlined in Appendix C of this consent;	Operation	Appendix 3
Environmental management practices	f) outline all environmental management practices and procedures that will followed during the operation of the Project, including those that will continue to be implemented by the Proponent in respect of the Initial Operations (see Condition 7);	Operation	This whole document
Site activities	g) include a description of all activities to be carried on the site during the operation of the Project;	Operation	1, 2

Issue	Commitment	Timing	Location in document
Environmental performance	h) detail how the environmental performance of the operation of the Project will be monitored, and what actions will be taken to address identified adverse environmental impacts, including (but not limited to): <ul style="list-style-type: none"> • Air Quality (see Conditions 21 to 27C); • Noise and Vibration (see Conditions 30 to 33A); • Transport (see Conditions 34 to 36); • Soil and Water (see Conditions 37 to 44); • Visual (see Conditions 45 and 46); • Waste (see Conditions 47 and 48); • Site Security (see Condition 48A); and • Aviation Safety (see Condition 48B). 	Operation	3, 7, 4.5, 8
Environmental roles and responsibilities	i) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project;	Operation	6.1
External communication	j) describe the procedures that will be implemented to: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the Project, , including information on and notification during flare activation and operation; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the Project; • respond to any non-compliance; and • respond to emergencies; and 	Operation	1.2, 3, 4.4, 5, 6.5, 6.6
Environmental strategies	k) include: <ul style="list-style-type: none"> • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. 	Operation	3

Appendix 4: EPL 828 Environmental Monitoring Points



Appendix 5 – Relevant Management Plans (links to Orica website) Ammonium Nitrate Expansion Project

PLANNING AND DEVELOPMENT

Orica undertakes thorough and extensive planning to enable construction activities to meet required safety and environmental management standards.

Ammonium Nitrate Expansion Project

Key documents

- [Environmental Assessment Summary](#) (PDF 1.4MB)
- [Environmental Assessment](#) (PDF 11.7MB)
- [Environmental Assessment - Appendices](#) (PDF 20.4MB)
- [Revised Preliminary Hazard Analysis \(PHA\) Report](#) (PDF 3.4MB)
- [Expansion Development Consent \(08_0129\)](#) (PDF 335.2KB)
- [MOD1 Development Consent \(08_0129 MOD1\) - Site Layout change](#) (PDF 335.2KB)
- [MOD2 Development Consent \(08_0129 MOD2\) - Nitric Acid Tank and Ammonia Flares](#) (PDF 1.9MB)
- [MOD3 Development Consent \(08_0129 MOD3\) - Ammonia Plant Production Quantity](#) (PDF 117.1KB)
- [MOD4 Development Consent \(08_0129 MOD4\) - Nitrates Effluent Tank](#) (PDF 163KB) and [stamped plans](#) (PDF 866.5KB)
- [MOD5 Development Consent \(08_0129 MOD5\) - Prill Tower Scrubber](#) (PDF 527.7KB)
- [MOD 1 EA](#) (PDF 5.4MB)
- [MOD 2 EA](#) (PDF 5.2MB)
- [MOD 3 EA](#) (PDF 6.6MB)
- [MOD 4 EA](#) (PDF 1.8MB)
- [MOD 5 EA](#) (PDF 12.4MB)

Construction management plans

- [Soil Management](#) (PDF 761.4KB)
- [Erosion and Sediment Control](#) (PDF 2.8MB)
- [Stormwater Management](#) (PDF 1.6MB)
- [Air Quality Management](#) (PDF 409.8KB)
- [Noise and Vibration Management](#) (PDF 459.5KB)
- [Waste Management](#) (PDF 159KB)

Environmental management plans

- [Environmental Management Systems Manual \(Operational Environmental Management Plan\)](#) (PDF 1.8MB)
- [Environmental Management Strategy](#) (PDF 1.8MB)
- [Existing Noise Verification](#) (PDF 325.7KB)
- [Independent Environmental Audit](#) (PDF 831KB)

Environmental assessment and annual reporting

- [2010 Annual Environmental Management Report](#) (PDF 399.1KB)
- [2011 Annual Environmental Management Report](#) (PDF 537.6KB)
- [2012 Annual Environmental Management Report](#) (PDF 844.3KB)
- [2013 Annual Environmental Management Report](#) (PDF 370.3KB)
 - [Appendix A](#) (PDF 423.6KB)

- [Appendix B \(PDF 6.8MB\)](#)
- [2014 Annual Environmental Management Report \(PDF 618.9KB\)](#)
- [2015 Annual Environmental Management Report \(PDF 590.6KB\)](#)
- [2016 Annual Environmental Management Report \(PDF 643.1KB\)](#)
- [2017 Annual Environmental Management Report \(PDF 742.4KB\)](#)
- [2018 Annual Environmental Management Report \(PDF 4.7MB\)](#)
- [2019 Annual Environmental Management Report \(PDF 1.3MB\)](#)
- [2020 Annual Environmental Management Report \(PDF 1.3MB\)](#)
- [2021 Annual Environmental Management Report \(PDF 7.7MB\)](#)

Noise audits

- [2022 Noise Audit \(PDF 9.4MB\)](#)
- [2021 Noise Audit \(PDF 6.6MB\)](#)
- [2020 Noise Audit \(PDF 7.4MB\)](#)
- [2019 Noise Audit \(PDF 38.1MB\)](#)
- [2018 Noise Audit \(PDF 30.3MB\)](#)
- [2017 Noise Audit \(PDF 8.1MB\)](#)

Independent environmental audit

- [2020 Independent environmental audit \(PDF 6MB\)](#)
- [2017 Independent environmental audit \(PDF 778.4KB\)](#)
- [2014 Independent environmental audit \(PDF 831KB\)](#)

Hazard Audit

- [2016 Independent Hazard Audit \(PDF 2.3MB\)](#)
- [2019 Independent Hazard Audit \(PDF 1.9MB\)](#)

Post approval documents for the Expansion Consent (MP08_0129) and subsequent modifications are publicly available from the following link on the [Department of Planning industry and Environment Major Planning Portal](#)