



June 2011

INTERNATIONAL CYANIDE MANAGEMENT CODE CYANIDE

Orica Australia Limited Papua New Guinea Supply Chain Certification Audit, Summary Audit Report

Submitted to:

International Cyanide Management Institute (ICMI)
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UNITED STATES OF AMERICA

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REPORT

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Table of Contents

1.0 INTRODUCTION	1
1.1 Operational Information	1
1.2 Description of Operation	1
1.2.1 Orica Australia Limited	1
1.2.1.1 Yarwun	1
1.2.2 Marine Transportation	1
1.2.2.1 Swire Shipping	2
1.2.3 Ports	2
1.2.3.1 Port of Lae, Papua New Guinea	2
1.3 Transit Storage	2
1.4 Auditors Findings and Attestation	3
1.5 Name and Signatures of Other Auditors:	3
1.6 Dates of Audit	3
2.0 CONSIGNOR SUMMARY	4
2.1 Principle 1 – Transport	4
2.1.1 Transport Practice 1.1	4
2.1.2 Transport Practice 1.2	5
2.1.3 Transport Practice 1.3	6
2.1.4 Transport Practice 1.4	7
2.1.5 Transport Practice 1.5	8
2.1.6 Transport Practice 1.6	9
2.2 Principle 2 – Interim Storage	10
2.2.1 Transport Practice 2.1	10
2.3 Principle 3 – Emergency Response	11
2.3.1 Transport Practice 3.1	11
2.3.2 Transport Practice 3.2	12
2.3.3 Transport Practice 3.3	13
2.3.4 Transport Practice 3.4	14
2.3.5 Transport Practice 3.5	15
3.0 DUE DILIGENCE	16
3.1 Shipping	16



ORICA PAPUA NEW GUINEA SUPPLY CHAIN, SUMMARY AUDIT REPORT

3.1.1	Swire Shipping	17
3.2	Ports	17
3.2.1	Port of Lae	18
3.3	Auditor Review of Due Diligence	19

APPENDICES

APPENDIX A

Limitations



1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility: Orica Papua New Guinea Supply Chain
Name of Facility Owner: Not Applicable
Name of Facility Operator: Orica Australia Ltd
Name of Responsible Manager: Dave Ellison, SH&E Distribution Risk Manager
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Gladstone, 4680
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1.2 Description of Operation

1.2.1 Orica Australia Limited

Orica is an Australian-owned, publicly listed company with global operations. Orica is managed as discrete business units that produce a wide variety of products and services. The Mining Chemicals unit is based in Australia and exports products to Asia, Africa and the Americas, as well as supplying the local Australian industry. The unit's main product is sodium cyanide (cyanide), which is manufactured at Orica's Yarwun cyanide production facility (Yarwun Facility) in Queensland, Australia. Orica Mining Chemicals is the world's second largest producer of cyanide.

1.2.1.1 Yarwun

Orica's Yarwun Facility, which is located at Yarwun, approximately eight kilometres (km) by road from Gladstone, Queensland, commenced operations in 1989 and is engaged in the manufacture of cyanide (both solid and liquid forms), ammonium nitrate, nitric acid, chlorine, sodium hydroxide, sodium hypochlorite, hydrochloric acid and expanded polystyrene balls.

Solid sodium cyanide is packaged in either sparge isocontainers, which have a maximum gross weight of 26 tonnes, or intermediate bulk containers (IBCs), which in turn are packed into a container. A maximum of 20 IBCs can be packed into a freight container with a maximum gross weight of 28 tonnes. Liquid cyanide is packaged into isotanks with a maximum gross weight of 26 tonnes.

Cyanide manufactured at the Yarwun Facility is used in gold mining operations within Australia, Asia, Africa, Papua New Guinea, New Zealand, Solomon Islands and South America.

Orica's Yarwun Facility was re-certified and being in full compliance with the Code on 17 March 2010.

1.2.2 Marine Transportation

Orica contracts all marine transportation of solid sodium cyanide within the Papua New Guinea Supply Chain to Swire Shipping (Swire).

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



1.2.2.1 Swire Shipping

Swire is the brand name for liner shipping services operated by The China Navigation Company Pty Ltd. Swire has provided niche, regional, multipurpose shipping services since 1883 when the China Navigation Company established liner services in Australasia.

The fleet of multipurpose vessels carries wide range of general/unitised cargoes (including heavy and bulky project lifts), bulk parcels and containerised cargoes (general and refrigerated).

1.2.3 Ports

1.2.3.1 Port of Lae, Papua New Guinea

The Port of Lae is located in the south-west Pacific Ocean on the mouth of the Markham River as it enters the Huon Gulf in north-east Papua New Guinea. Lae is the capital of Papua New Guinea's Morobe Province and the Port of Lae is Papua New Guinea's main cargo port and the marketing center for agricultural produce from the region.

The PNG Ports Corporation Limited is the port authority for the Port of Lae. It succeeded PNG Harbours Limited with the passage of the amended Act of 2002. PNG Ports Corporation is responsible for controlling and managing all state-owned seaports in Papua New Guinea, but the regulatory functions once performed by the PNG Harbours Limited are now carried out by the Department of Transportation.

The Port of Lae Harbour Master oversees all port operations. This includes:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches
- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security, etc
- Management programmes for container placement and movement including identification of hazardous cargoes.

1.3 Transit Storage

Storage in transit does occur at the Port of Lae, Papua New Guinea, while formalities such as customs clearance, quarantine checks and carrier releases are performed. Once formalities are complete, the cyanide containers are collected by the respective road transporters.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



1.4 Auditors Findings and Attestation

Orica Papua New Guinea Supply Chain is: in full compliance with **The International Cyanide Management Code**

in substantial compliance with

not in compliance with

Audit Company: Golder Associates

Audit Team Leader: Edward Clerk, CEnvP (112), RABQSA (020778)

Email: eclerk@golder.com.au

1.5 Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Edward Clerk	Lead Auditor and Technical Specialist		12 May 2011

1.6 Dates of Audit

The Orica Papua New Guinea Supply Chain Certification Audit was undertaken on 28 April 2011 based on the following due diligence reports:

- Swire Shipping Due Diligence Review. The due diligence was undertaken by Orica in July 2010
- Port of Lae, Papua New Guinea, Due Diligence Review. The due diligence was undertaken by Orica on 23 October 2010

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the *International Cyanide Management Code Verification Protocol for Cyanide Transportation Operations* and using standard and accepted practices for health, safety and environmental audits.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.0 CONSIGNOR SUMMARY

2.1 Principle 1 – Transport

Transport Cyanide in a manner that minimises the potential for accidents and releases.

2.1.1 Transport Practice 1.1

Select cyanide transport routes to minimise the potential for accidents and releases.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.1 requiring the transport of cyanide in a manner that minimises the potential for accidents and releases.

Orica

Orica uses Swire for its international shipping to Papua New Guinea due to its selection of services available from the Port of Brisbane. There is no road transport associated with this audit.

Orica has developed procedures to guide the selection of transport routes to minimise the potential for accidents and releases, or the potential impacts of accidents and releases. Routes are selected by Orica’s SH&E Distribution Risk Manager in consultation with Orica’s transport contractors and customers.

Swire Shipping

Orica uses Swire for its international shipping to Papua New Guinea due to its selection of services available from the Port of Brisbane.

Orica does not have control of the routes taken by the shipping lines contracted to transport sodium cyanide. In selecting a route, shipping lines must take into account factors such as tides, currents, winds, storms and load compatibilities. To account for this variability, Orica has undertaken due diligence reviews of Swire. In this due diligence review, Orica concluded that:

“...through its dealings with Swire Shipping has found them to be a highly professional shipping organisation.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Swire Shipping management and shipping of the solid sodium product. The review is not a final acceptance of Swire Shipping for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.”

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



2.1.2 Transport Practice 1.2

Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

Orica

Orica utilise Swire for the marine transport of sodium cyanide to the Port of Lae. All handling (including loading and unloading) is undertaken by other entities (e.g. stevedoring companies) at the Port of Brisbane and Port of Lae. The Port of Brisbane is not included in the scope of this audit, but is covered under Orica’s Australian Supply Chain, which was certified on 5 October 2010. Assessment of the Port of Lae by Orica was via the due diligence review referred to in Section 3.0.

Swire Shipping

Swire does not handle any sodium cyanide during transport. This is undertaken by stevedoring companies at the departure and destination ports.

Swire was assessed for code compliance by Orica through a due diligence review. The due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

The operation is **in full compliance with** **Transport Practice 1.3**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.3 requiring that transport equipment is suitable for the cyanide shipment.

Orica

Orica utilise Swire for the marine transport of sodium cyanide to the Port of Lae. All handling (including loading and unloading) is undertaken by other entities (e.g. stevedoring companies) at the Port of Brisbane and Port of Lae. The Port of Brisbane is not included in the scope of this audit, but is covered under Orica’s Australian Supply Chain, which was certified on 5 October 2010. Assessment of the Port of Lae by Orica was via the due diligence review referred to in Section 3.0.

Swire Shipping

Swire does not handle any sodium cyanide during transport. This is undertaken by stevedoring companies at the departure and destination ports.

Swire was assessed for code compliance by Orica through a due diligence review. The due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

Orica’s due diligence concluded that:

“...through its dealings with Swire Shipping has found them to be a highly professional shipping organisation.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Swire Shipping management and shipping of the solid sodium product. The review is not a final acceptance of Swire Shipping for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.”

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



2.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.4 requiring the operation develop and implement a safety program for transport of cyanide.

Orica

Orica utilise Swire for the marine transport of sodium cyanide to the Port of Lae. All handling (including loading and unloading) is undertaken by other entities (e.g. stevedoring companies) at the Port of Brisbane and Port of Lae. The Port of Brisbane is not included in the scope of this audit, but is covered under Orica’s Australian Supply Chain, which was certified on 5 October 2010. Assessment of the Port of Lae by Orica was via the due diligence review referred to in Section 3.0.

Swire Shipping

Swire does not handle any sodium cyanide during transport. This is undertaken by stevedoring companies at the departure and destination ports.

Swire was assessed for code compliance by Orica through a due diligence review. The due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.1.5 Transport Practice 1.5

Follow international standards for transportation of cyanide by sea and air.

in full compliance with

The operation is in substantial compliance with **Transport Practice 1.5**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.5 requiring the operation follow international standards for transportation of cyanide by sea and air.

Orica

Orica does transport consignments of cyanide by sea within the scope of this audit. As identified during the Orica Australia Supply Chain certification audit, all containers (i.e. freight containers of IBCs, sparge isocontainers or liquid isocontainers) are placarded at the Yarwun Facility in accordance with the requirements of the IMDG Code with UN numbers, the Class 6 dangerous goods class label and the environmentally hazardous label (i.e. fish with St Andrews Cross). This level of placarding is consistent with the requirements of the ADG Code.

A container intended for sea transport has documentation prepared in accordance with the IMDG code, which is faxed to the shipping agent. The normal road documentation prepared in accordance with the ADG Code accompanies the load on its road/rail voyage to the Port of Brisbane.

Orica does not transport consignments of cyanide by air within the scope of this audit.

Section 37 of Orica's Sodium Cyanide Transport Management Plan notes that no sodium cyanide manufactured by Orica Mining Chemicals or manufactured by third parties on behalf of Orica Mining Chemicals will be permitted to be transported by air without express written permission of Orica.

Swire Shipping

A due diligence of Swire conducted by Orica indicated that the shipping companies transported cyanide in compliance with the Dangerous Goods Code of the International Maritime Organisation. The due diligence specifically referenced provisions of the Dangerous Goods Code that are required to be addressed under this question.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 1.6 requiring the tracking of cyanide shipments to prevent losses during transport.

Orica

Orica communicates with Swire and the Port of Lae representatives by phone, fax and email. Communication equipment (phone, fax and email) is tested through continuous use.

Orica contracts Swire shipping to handle all transport within the scope of this audit. Despite this, Orica does ensure its transport contractor implements systems or procedures to track the progress of cyanide shipments. Orica’s *Transportation of Cyanide – Tracking of Shipments* procedure requires Orica and its contracted transportation agencies to maintain a tracking system.

The MO41 Documentation prepared by Orica and accompanying each container of sodium cyanide contains information on the amount of cyanide in transit and necessary handling requirements.

Swire Shipping

Swire was assessed for code compliance by Orica through a due diligence review. The due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

The auditor was informed by Orica that this framework includes the provision of appropriate communications.

In addition, the due diligence review states that:

“Swire Shipping vessels have continuous means of tracking and communications during their voyages.”

Swire Shipping has their own in-house tracking systems for tracking freight which is linked by the container number and Bill of Lading (BOL) number.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.2 Principle 2 – Interim Storage

Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

2.2.1 Transport Practice 2.1

Store cyanide in a manner that minimises the potential for accidental releases.

The operation is in full compliance with **Transport Practice 2.1**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 2.1 requiring transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Orica

Orica does not store sodium cyanide within the scope of this audit. Storage in transit does occur at the Port of Lae, Papua New Guinea, while formalities such as customs clearance and carrier releases are performed.

Port of Lae

A due diligence of the Port of Lae was conducted by Orica in October 2010. The due diligence found that:

“Cyanide on arrival at Lae is placed in a segregated area awaiting relevant governmental clearances. This area, when cyanide is present, is clearly signed providing appropriate warning to port personnel that cyanide is present. Additionally, signage is provided prohibiting smoking, consumption of foodstuffs and liquids in the specific area and the prohibition of open sources of ignition.

The port has a minimum standard of personnel protective equipment requirement which includes the wearing of relevant safety footwear, clearly visible clothing and protective headwear in specific areas. This personal protective equipment requirement is suitable for cyanide that remains contained within sealed containers at all times.

On collection from the port, after completion of the appropriate governmental clearances, containers are collected by transportation assets operated under code certified transportation by Barrick Porgera.”

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.3 Principle 3 – Emergency Response

Protect communities and the environment through the development of emergency response strategies and capabilities.

2.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 3.1 requiring the operation prepare detailed Emergency Response Plans for potential cyanide releases.

Orica

Whilst Orica’s product is embarked on Swire vessels, all emergency response is governed by the vessel’s captain. Despite this, Orica has developed a detailed emergency response document (Emergency Response Guide Sodium Cyanide) to provide emergency response guidance for specific mine site, storage facilities and transport incidents involving spillage of Orica Product.

The Emergency Response Guide Sodium Cyanide has been developed by Orica Mining Chemicals to provide guidance in the development of site and transport route emergency response plans for the management of incidents involving spillage of Orica sodium cyanide product.

Orica provide assistance and support to transport companies through the Emergency Response Guide Sodium Cyanide, 24 hour call centre and product specialists based at the Yarwun Facility.

Orica has also developed a Distribution Responsibilities Procedure (Document YYA333192221) which addresses the responsibilities for handling and minimising impacts associated with incidents involving sodium cyanide. As incidents may occur anywhere within the distribution chain it is important for responsibilities to be defined at all stages.

Swire Shipping

Whilst Orica’s product is embarked on Swire vessels, all emergency response is governed by the vessel’s captain. Orica undertook a due diligence review of Swire in 2010. This due diligence stated that:

“Swire Shipping operations staff provide copies of the Emergency Information together with the Dangerous Goods manifest (stowage plan) and Packing Certificates for each hazardous cargo unit to be loaded at that port to the ship’s Master.”

Orica concluded in its due diligence that:

“...through its dealings with Swire Shipping has found them to be a highly professional shipping organisation.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Swire Shipping management and shipping of the solid sodium product. The review is not a final acceptance of Swire Shipping for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.”

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



2.3.2 Transport Practice 3.2

Designate appropriate response personnel and commit necessary resources for emergency response.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 3.2 requiring the operation designate appropriate response personnel and commit necessary resources for emergency response.

Orica

Orica contracts all transport within the scope of this audit to Swire. The SH&E Distribution Risk Manager advised that Orica retains a technical and advisory role in an emergency and can provide physical resources and personnel to assist emergency services in the response to an incident involving cyanide.

Swire Shipping

Whilst Orica’s product is embarked on Swire vessels, all emergency response is governed by the vessel’s captain. Orica undertook a due diligence review of Swire in 2010. This due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 3.3 requiring the operating develop procedures for internal and external emergency notification and reporting.

Orica

There are procedures and contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency. The *Yarwun Site Emergency Plan* and the *Emergency Response Guide Sodium Cyanide* includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the emergency, as appropriate. Receivers/consignees are advised via the Customer Service Centre.

Within the *Emergency Response Guide Sodium Cyanide* the role of Orica ERS is one of communication. ERS operates 24 hours a day providing telephone advice and assistance to the public, emergency services and others on incidents relating to the transport, storage and use of chemical products and raw materials in emergency situations.

There are provisions to ensure that internal and external emergency notification and reporting procedures are kept current. Orica has a *Model Procedure (MP-SG-020C-Emergency Plans)* detailing the requirement for the development of an effective emergency response system at either a site or business level.

Lists of emergency contact information for Orica chemical specialists and relevant subcontractors, including transport subcontractors, are detailed in Orica’s *Emergency Contact list (YYA187615090)* which is managed within Orica’s document control system.

Swire Shipping

Whilst Orica’s product is embarked on Swire vessels, all emergency response is governed by the vessel’s captain. Orica undertook a due diligence review of Swire in 2010. This due diligence notes that:

“The Australian Government department “Australian Maritime Safety Authority “ (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia’s maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer’s qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.”

All shipping to and from Australia is subject to this regulatory framework.

The auditor was informed by Orica that this framework includes the provision of appropriate communications.

In addition, the due diligence review states that:

“Swire Shipping vessels have continuous means of tracking and communications during their voyages.”

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



2.3.4 Transport Practice 3.4

Develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

The operation is in full compliance with **Transport Practice 3.4**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 3.4, requiring the operation to develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment is NOT APPLICABLE to the Orica Papua New Guinea Supply Chain.

Orica

This Transport Practice does not apply to sodium cyanide transported by sea. Given the packaging and storage in containers, spills, if they occur, are likely to be contained within the containers. Orica informed the auditor that the containers are not opened within the scope of this audit.

Swire Shipping

Whilst Orica's product is embarked on Swire vessels, all emergency response is governed by the vessel's captain. Orica undertook a due diligence review of Swire in 2010. This due diligence stated that:

"Swire Shipping operations staff provide copies of the Emergency Information together with the Dangerous Goods manifest (stowage plan) and Packing Certificates for each hazardous cargo unit to be loaded at that port to the ship's Master."

Orica concluded in its due diligence that:

"...through its dealings with Swire Shipping has found them to be a highly professional shipping organisation."

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



2.3.5 Transport Practice 3.5

Periodically evaluate response procedures and capabilities and revise them as needed.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 3.5, requiring the operation to periodically evaluate response procedures and capabilities and revise them as needed is NOT APPLICABLE to the Orica Papua New Guinea Supply Chain.

Orica

This Transport Practice does not apply to sodium cyanide transported by sea. Despite this, Orica has systems in place for periodically reviewing and evaluating the adequacy and implementation of their cyanide emergency documentation.

Orica has a *Model Procedure (MP-SG-020C-Emergency Plans)* detailing the requirement for the development of an effective emergency response system at either a site or business level.

The *Emergency Response Guide Sodium Cyanide* is a controlled document that is subject to an annual review with the last review in December 2010.

Despite not being applicable, Orica has a procedure to evaluate the performance after implementation of their cyanide emergency documentation and revise them as needed.

Orica's *Model Procedure MP-SG-045B Corrective and Preventive Action* documents the Orica global procedure for investigation of incidents.

All incidents categorised as Category II or above are also reviewed by the division management team for additional leanings, cross business communication requirements and planning purposes.

Orica has adopted a consultative approach and work with their transport contractors to undertake exercises and review the emergency plans. The emergency response plan and guide are controlled documents under Orica's document management system and subject to periodic review.

Swire Shipping

Whilst Orica's product is embarked on Swire vessels, all emergency response is governed by the vessel's captain. Orica undertook a due diligence review of Swire in 2010. This due diligence notes that:

"The Australian Government department "Australian Maritime Safety Authority " (AMSA) represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competency, training and fatigue management.

Australia's maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer's qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention."

All shipping to and from Australia is subject to this regulatory framework.

Orica concluded in its due diligence that:

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



“...through its dealings with Swire Shipping has found them to be a highly professional shipping organisation.”

3.0 DUE DILIGENCE

3.1 Shipping

Orica conducted a due diligence review of the Swire operation utilised as part of their Papua New Guinea Supply Chain in July 2010 (Swire Shipping Due Diligence Review, Orica Mining Chemicals, July 2010).

The reviews were conducted by David Ellison, SH&E Distribution Risk Manager at Orica Australia Pty Ltd. David Ellison meets the ICMI requirements for a Transport Expert.

The following items were addressed within the due diligence:

- Compliance with ICMC
 - Transport Practice 1.1
 - Transport Practice 1.5 (1.5.1)
 - Transport Practice 1.6.
- Australian Shipping Regulatory Framework
 - Australian Maritime Safety Authority (AMSA)
 - Cargoes
 - Port State Control
 - Power of Inspection and Detention.
- Australian Department of Defence.
- Conclusion

The due diligence review was compiled through physical visits, interviews and discussions with appropriate personnel and review of applicable documentation.

The due diligence review was found by the auditor to sufficiently evaluate the shipping operations (discussed below), and additional management measures by the consigner were not considered necessary.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



3.1.1 Swire Shipping

Swire is a carrier service providing international shipping containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading port (Port of Brisbane) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Port of Brisbane to the destination country or continent.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into IBCs contained with 20 foot general purpose shipping containers. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5 and 5 year inspection regime in accordance with IMDG Code requirements. IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMDG Code this packaging is referenced as UN/11HD2/X/05-06/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority.

Bulk sparge isotainers and shipping containers containing IBCs are placarded with an EIP detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are also placarded with the environmentally hazardous markings.

Each shipment has appropriate documentation, including shipping manifest, load/stowage plan and emergency response information.

Procedures are in place that requires compliance with the stowage and separation requirements of Chapter 7 of the IMDG Code.

Swire vessels have continuous means of tracking and communication during their voyages. They also have their own in-house tracking systems for tracking freight, which is linked by the container number and Bill of Lading (BOL) number.

The Australian Maritime Safety Authority (AMSA) is responsible for implementing IMO regulations for all safety related aspects of marine carriage of all types including bulk liquid and solid cargoes, dangerous goods, general cargoes, containers, as well as standards and operations concerning cargo lifting gear. AMSA personnel may board a ship at any time to inspect and detain un-seaworthy or substandard ships.

Through its due diligence assessment, Orica has found no issues of concern in regards to Swire management and shipping of the solid sodium product. It notes that the due diligence is not a final acceptance of Swire for future work and, as with all service providers to Orica, Orica will continue to review and monitor their performance.

3.2 Ports

Orica conducted due diligence reviews of the Port of Lae operations utilised as part of their Papua New Guinea Supply Chain in October 2010 (Port of Lae, Papua New Guinea, Due Diligence Review, Orica Mining Chemicals 23 October 2010).

The reviews were conducted by David Ellison, SH&E Distribution Risk Manager of Orica Australia Pty Ltd. David Ellison meets the ICMI requirements for a Transport Expert.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



The following items were addressed within the due diligences:

- Compliance with ICMC
 - Transport Practice 1.1
 - Transport Practice 1.5 (1.5.1)
 - Transport Practice 1.6
 - Transport Practice 2.1.
- Summary of Port Operations.
- Arrivals.
- Stevedoring.
- Dangerous Goods Logistics centre.
- Port information.
- Conclusion.

The due diligence review was compiled through physical visits, interviews and discussions with appropriate personnel and review of applicable documentation.

The due diligence review was found by the auditor to sufficiently evaluate the port operations (discussed below), and additional management measures by the consigner were not considered necessary.

3.2.1 Port of Lae

Orica uses one major shipping line (Swire) to transport its shipments to the Port of Lae in Papua New Guinea.

The Port of Lae is part of the overall route as follows:

- Orica's production, packaging and despatch.
- Road/rail transportation to the Port of Brisbane covered under the Orica Australia Supply Chain.
- International shipping to the Port of Lae and the handling of the containers from the vessel onto the wharf and into the designated transit arras for customs clearance.

Road Transportation from the Port of Lae is covered under code certified transportation in Papua New Guinea.

Orica's product is packaged into composite IBCs consisting of a 1,300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base with a wooden lid and strapped. These IBCs are loaded into shipping containers. Both the IBCs and shipping containers are labelled as per the IMDG Code.

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedores management systems which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

Orica Papua New Guinea Supply Chain

7 June 2011

Name of Facility

Signature of Lead Auditor

Date



Cyanide on arrival at Lae is placed in a segregated area awaiting relevant governmental clearances. This area, when cyanide is present, is clearly signed providing appropriate warning to port personnel that cyanide is present. Additionally, signage is provided prohibiting smoking, consumption of foodstuffs and liquids in the specific area and the prohibition of open sources of ignition.

The port has a minimum standard of personnel protective equipment requirement which includes the wearing of relevant safety footwear, clearly visible clothing and protective headwear in specific areas. This personal protective equipment requirement is suitable for cyanide that remains contained within sealed containers at all times.

On collection from the port, after completion of the appropriate governmental clearances, containers are collected by transportation assets operated under code certified transportation by Barrick Porgera.

The Port of Lae is accredited under the International Ship and Port Security (ISPS) Code and is classed as a secure area. The port has a full time security presence. Access to and from the container terminal is well controlled.

All solid sodium cyanide remains at all times within its sealed containers. Containers are in a segregated area which is open to the air to prevent the build up of hydrogen cyanide gas. The area in which the containers are located is suitable to effectively contain any spillage that may occur. Barrick Porgera a code certified site, provides technical advice as to the nature of the product and spill procedures to the ports on site emergency response capability.

The due diligence concluded that the port is operating in a safe and responsible manner and is suitable for the transit of sodium cyanide. This suitability is added to by the presence and close working relationship between the port and the Barrick Porgera site, with respect to sodium cyanide.

3.3 Auditor Review of Due Diligence

Orica has concluded from the due diligence assessments that no major issues of concern were identified with respect to the transportation of sodium cyanide throughout the supply chain by the shipping operator and port utilised. Based on a review of the due diligence reports, the auditor accepts this conclusion.

Orica Papua New Guinea Supply Chain

Name of Facility

Signature of Lead Auditor

7 June 2011

Date



Report Signature Page

GOLDER ASSOCIATES PTY LTD

A handwritten signature in black ink, appearing to read 'E. Clerk'.

Ed Clerk
ICMC Lead Auditor and Technical Specialist

RJB/ECW/arp

A.B.N. 64 006 107 857

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APPENDIX A

Limitations



LIMITATIONS

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