



July 2016

INTERNATIONAL CYANIDE MANAGEMENT CODE

Orica Australia Pty Ltd, Papua New Guinea Supply Chain Recertification Audit, Summary Audit Report

Submitted to:

International Cyanide Management Institute (ICMI)
1400 I Street, NW- Suite 550
WASHINGTON DC 20005
UNITED STATES OF AMERICA

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Submitted to:

REPORT



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Distribution:

Electronic Copy – Orica Australia Pty Ltd
Electronic Copy – Golder Associates Pty Ltd







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APPENDIX A

Important Information



1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility: Orica Australia PNG Supply Chain

Name of Facility Owner: Not Applicable

Name of Facility Operator: Orica Australia Pty Ltd

Name of Responsible Manager: Jonathan Regan, Logistics Compliance Lead – Australia Pacific Indonesia

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1.2 Audit Scope

The scope of the Papua New Guinea (PNG) Supply Chain covers the transportation of cyanide from the Port of Brisbane, Australia to the Port of Lae, PNG and transport by road from the Port of Lae to Morobe Mining Joint Venture's (MMJV) Hidden Valley Mine Site by East West Transport (EWT) and Hidden Valley Transport (HVT).

This specifically includes:

- Oversight of the Orica Papua New Guinea Supply Chain by Orica.
- Marine transportation of solid cyanide from the Port of Brisbane to the Port Lae using Swire Shipping (Swire) and Australian National Line (ANL).
- The Port of Lae.
- Road transportation from the Port of Lae to Hidden Valley Gold Mine using EWT and HVT.

During the duration of the recertification Audit, Orica ceased using EWT on 22 March 2015 and commenced with transporting with HVT in April 2015.

EWT's contract with Orica to transport cyanide had expired at the time of the audit, consequently access to EWT was not possible and audit evidence was limited. Orica was able to provide some evidence including copies of documentation (namely Convoy Reports and emergency exercises) and evidence of their contractor checks (Carrier Assessments). The audit has been conducted based on this available information.

Orica Papua New Guinea Supply Chain

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1.3 Description of Operations

1.3.1 Orica Australia Pty Ltd

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.

1.3.2 Yarwun Facility

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 isotainers, which have a maximum gross weight of 26 tonnes, or 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 isotainers 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 as being in full compliance with the Code on 29 October 2013. Orica's Yarwun Facility is not part of the scope of this audit.

1.4 Road Transportation

Over the duration of the three year recertification period, Orica contracted all road transportation within the Papua New Guinea Supply Chain to either EWT or HVT.

1.4.1 East West Transport

EWT is an operating division of Steamship Trading Company Limited, part of the Swire Group of Companies. EWT operates 150 trucks from eight depots across PNG including Lae, Goroka, Madang, Port Moresby and Mt Hagen. EWT provides a range of services supporting metro, long haul and bulk fuel transportation. It operates across PNG and has partnered with a number of large resource conglomerates, fuel and energy providers, manufacturing, agricultural and primary industries. As well as transport services, EWT also offers transit storage of dangerous goods at its Lae facility by the provision of purpose built and designed bunds with drainage capture capability.

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1.4.2 Hidden Valley Transport

HVT is a transportation and logistics company engaged in the transportation of goods within the Morobe Province of Papua New Guinea. HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

1.5 Marine Transportation

Orica contracts all marine transportation of solid sodium cyanide within the Papua New Guinea Supply Chain to ANL and Swire.

1.5.1 ANL

Headquartered in Melbourne Australia and with regional offices and agents around the globe, ANL ships cargo internationally with extensive coverage throughout all of Asia, Europe, North America, Mediterranean, Australia and New Zealand, Papua New Guinea, Indian Subcontinent and Middle East/Gulf. ANL was formed on 1 October 1956 as the Australian Coastal Shipping Commission with the passing of the Australia Coastal Shipping Commission Act 1956. In 1989 ANL was established as a wholly owned government company. In 1998, a French company, CMA CGM bought the naming rights of ANL from the Australian Federal Government.

CMA CGM operates over 450 vessels on all of the world's major shipping lanes and is currently the world's third largest container shipping group. ANL employs over 450 staff globally and moves approximately 1.5 million TEUs each year.

1.5.2 Swire Shipping

Swire is the brand name for all liner shipping services operated by The China Navigation Company Pte Ltd. It has provided niche, regional, multipurpose shipping services since 1883 when The China Navigation Company established liner services in Australasia. From their traditional core trading area (the Asia – South Pacific region), they have expanded to offer shipping links between over 100 ports in Asia, Pacific Islands, Australia, New Zealand, North America, Europe the Middle East and the Indian Sub-Continent.

The China Navigation Company Pte Ltd is wholly owned by The China Navigation Company Ltd, a London registered company that oversees the marine operations of its parent company, John Swire and Sons.

1.5.3 Ports

1.5.3.1 Port of Lae

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 PNG. Lae is the capital of PNG's Morobe Province and the Port of Lae is PNG's main cargo port and the marketing centre 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 PNG, but the regulatory functions once performed by the PNG Harbours Limited are now carried out by the Department of Transportation.

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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.

1.5.3.2 Lae Port Services

Lae Port Services is part of Steamships Trading Company and is one of the three stevedoring providers at the Port (along with United Stevedors and Riback).

Lae Port Services is situated within the perimeter of the Port of Lae which is controlled by PNG Ports Corporation.

1.6 Transit Storage

Storage in transit does occur at the Port of Lae, PNG, 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.

Storage in transit did occur at the EWT Lae Depot in a dedicated storage facility while convoy logistics are finalised. Additional storage time is required for up to 14 days to provide product for MMJV's Hidden Valley Mine in the event of supply chain disruptions, end user usage spikes and to cater for shipping line scheduling availability.

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1.7 Auditors Findings and Attestation

Orica's PNG Supply Chain is:

☒ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

The International Cyanide Management Code

Audit Company: Golder Associates Pty Ltd
Audit Team Leader: Mike Woods – Exemplar Global (113792)
Email: mwoods@golder.com.au

No significant cyanide exposures and releases were noted as occurring during the audit period.

Name and Signatures of Auditors:

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Technical Specialist		27 July 2016

Dates of Audit:

The Recertification Audit of Orica's PNG Supply Chain was undertaken over a period of one (1) week concluding on 22 June 2016.

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.

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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 supply chain

☐ 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 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 ICMC Compliance Officer in consultation with Orica's transport contractors and customers. The transport contractor and Orica staff drive the potential routes and assess these routes in accordance with the following documents. The procedures ensure that the following is undertaken:

- Key factors such as population density, infrastructure, pitch and grade and water bodies and fog are addressed. (SUP-GLO-PRO-001-017 and SUP-GLO-PRO-021-006)
- Identification of risks along a route, including transport, storage, external factors. (SUP-GLO-PRO-009-009)
- Biennial review of Route assessment or as needed reviews following a change to the delivery process or an incident. (SUP-GLO-PRO-021-006)
- Consideration of feedback from drivers and convoy escorts etc. when determining risks and risk mitigation (SUP-GLO-PRO-009-009)
- Documentation of route risk assessments. (SUP-GLO-PRO-009-009)
- Routes selection take into account regulatory requirements and competent authority instructions and recommendations (SUP-GLO-PRO-001)
- Orica's requirement that Transport Contractors use convoys, escorts or other additional safety or security measures when routes present special safety or security concerns (SUP-GLO-PRO-001)

Prior to commence of services with any Transport of Storage contractors, Orica liaises with the Supplier to ensure they are trained in specific issues, including hazards of the material, special storage and transport requirements, product and material segregation, transport routes to be followed, emergency and spill response, notification and investigation requirements and personal protective equipment (PPE). The Orica Contract Manager undertakes monitoring of the Supplier to ensure these actions are being completed.

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The international sales and exports of sodium cyanide by Orica 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 uses ANL and Swire for its international shipping to PNG.

Orica delegates a Contract Manager for each supplier, one of their role is to monitor and assess/audit the contracted service provider commensurate with risk assessment including regular performance reviews and incident notification.

Orica, through its transport contractors, has advised external responders, medical facilities and communities as necessary of their roles during an emergency response. The Transport Management Policy notes that responsibility for emergency response will extend only to aspects of supply to which Orica is contractually responsible. However, Orica will work with all customers and assist where possible in maintaining an emergency response plan and provide specialist advice in the event of any emergency.

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 engaged Golder to complete due diligence reviews of Swire and ANL to determine if shipments are in accordance with the IMO DG Code.

As required in its Due Diligence procedure, Orica has completed its triennial due diligence assessment of the Port of Lae and its Port Services. The assessment evaluates the security, safety, training and emergency response aspects of the selected port facilities and determine if additional management procedures are necessary.

During the audit recertification period Orica subcontracted the transportation of cyanide within PNG to EWT and HVT. At the time of the audit, Orica had ceased to engage EWT. Orica uses procedural controls, inspection and contracts to satisfy itself that subcontractors maintain compliance with the requirements of the ICMC.

Orica's TMP states that agents, distributors, transport companies and other parties contracted to Orica shall be responsible for implementing the *International Cyanide Management Code* and contracts between Orica Mining Chemicals and these parties shall incorporate the obligations of each party in meeting the Code's requirements.

Where subcontractors are utilised by contracted carriers, the Orica's TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed. The assessment of transportation agencies is via the Orica – Carrier Assessment Questionnaire, which enables a self-assessment and external assessment. Orica had completed assessments of both EWT and HVT.

Orica's TMP states that agents, distributors, transport companies and other parties contracted to Orica shall be responsible for implementing the *International Cyanide Management Code* and contracts between Orica and these parties shall incorporate the obligations of each party in meeting the Code's requirements.

Where subcontractors are utilised by contracted carriers, the TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed. The assessment of transportation agencies is via the Carrier Assessment, which enables a self-assessment and external assessment.

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East-West Transport

At the time of the audit, Orica ceased to engage EWT and availability of information is limited.

For previous works Orica and East West Transport have had a signed Services Agreement which requires that both companies *"must comply with the requirements of the International Cyanide Management Code in relation to its delivery, storage and handling of cyanide"*

EWT do not subcontract the transportation of cyanide within the scope of this audit.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

Swire Shipping

Swire is a carrier service providing international shipping of 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.

Basically, an export or international route will include the following:

- Orica production, packaging and despatch
- Road and rail transportation to port
- International shipping to destination port
- Road transportation to customer (mining operation).

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area.

Swire has their own in-house tracking systems for tracking freight.

The routes from the Port of Brisbane to Papua New Guinea are not definitive as ships can take varying routes to arrive at the same destination as they take into account tides, currents, wind and storms. This is also noted in the schedules which provide estimated travel times between ports.

ANL Shipping

ANL is a carrier service providing international shipping of 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.

Basically, an export or international route will include the following:

- Orica production, packaging and despatch
- Road and rail transportation to port
- International shipping to destination port
- Road transportation to customer (mining operation).

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area.

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ANL has their own in-house tracking systems for tracking freight.

The routes from the Port of Brisbane to Papua New Guinea are not definitive as ships can take varying routes to arrive at the same destination as they take into account tides, currents, wind and storms. This is also noted in the schedules which provide estimated travel times between ports.

Port of Lae and Lae Port Services

Orica conducted Due Diligence Reviews of the Port of Lae on 12 April 2016 and Port Services on 14 April 2016. The due diligence assessments were compiled through physical visits, interviews and discussions with appropriate personnel and review of applicable documentation.

The Port of Lae due diligence determined that based on the information provided, the site inspection and past experience with the Port, the Port of Lae is suitable for Orica to use as a port of entry for cyanide transport to Papua New Guinea.

The due diligence confirmed that Lae Port Services has in place a safety management system, procedures to identify and mitigate risk, maintain their equipment, implements and tests their emergency response plan, provide a secure site and train their employees in the safe handling of dangerous goods.

The due diligence confirmed that based on the information provided, Port Services at Lae has been assessed as suitable for Orica to use to discharge sodium cyanide containers and isotanks without the need for additional risk mitigation steps to be implemented.

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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 supply chain 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 does not directly operate transport vehicles in its Papua New Guinea Supply Chain; this was undertaken by its contractors EWT and HVT and now only by HVT.

Orica requires that its transport contractors use only trained, qualified and licensed operators to operate its transport vehicle and has processing in place to ensure this.

Orica's TMP states that agents, distributors, transport companies and other parties contracted to Orica shall be responsible for implementing the Code and contracts between Orica and these parties shall incorporate the obligations of each party in meeting the Code's requirements.

Where subcontractors are utilised by contracted carriers, TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed.

The assessment of transportation agencies is via the Carrier Assessment. The Carrier Assessment requires that subcontractors are to be assessed as a minimum on a two yearly basis with additional assessments conducted following any changes to operational requirements or as a result of newly identified risks. Driver training, cyanide awareness, is covered in the Carrier Assessment.

Orica does require that transport contractors operating cyanide handling equipment are being trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures.

Orica's TMP clearly describes the minimum training standards expected by Orica in the transportation of cyanide. Minimum training requirements include mandatory Cyanide Safety Awareness; Emergency Response and Sparge Unloading (where required) to all Road drivers, storage personnel, road transport administration personnel and offers the same training to all other Supply chain personnel.

The TMP also notes that the prime contractor is responsible for ensuring that all personnel meet the above training requirements.

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East West Transport

EWT only uses trained, qualified and licensed operators. All truck drivers within PNG are required by law to have a valid Class 4 (heavy goods) licence issued by the government of PNG. A separate system for the licencing of dangerous goods drivers does not operate within PNG. The Check Point (Carrier Assessment) also confirms that all drivers' licences are current.

EWT also uses the convoy pre-departure check to undertake a final check that licences are valid prior to each departure. The information is recorded on the Convoy Report.

The Check Point assesses Training and Competency. This confirms that there is training matrix for each employee; that the training has been completed; and that training includes PPE, dangerous goods etc.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

By being certified it can be confirmed that they have procedures and policies in place to use only trained and qualified operators who are trained how to handle cyanide safely.

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2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

The supply chain 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 does not directly operate transport vehicles in its Papua New Guinea Supply Chain; this was undertaken by its contractors EWT and HVT and now only by HVT.

Section 3.8 (c) of the Orica TMP required that all "All transportation assets are load capable within the regulatory requirements of the area of operation"

Orica has developed Carrier Safety Program Procedure that details the minimum safety requirements and programmes that Orica requires its prime contractor and associated subcontractors to implement. These include procedures in place to prevent shifting of loads in transit and procedures, through which transportation can be modified, suspended or cancelled if conditions warrant; e.g. severe weather conditions, civil unrest, etc.

Where subcontractors are utilised by contracted carriers, the Orica TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed. The assessment of transportation agencies is via the Carrier Assessment Questionnaire, which enables a self-assessment and external assessment.

East West Transport

The Convoy Report includes a Convoy Preparation Checklist which requires the following related items to be checked

- Have the vehicles and trailers passed the check services? (confirm if the repair and maintenance form was signed by the workshop manager or supervisor)
- Containers/isotanks to be loaded inspection checklist completed prior to loading and sent to Orica
- Containers/isotanks loaded
- Is the load secured (have they put the twist locks on)

The Orica Check Point assessment contains sections to review the locks and condition of the shipping containers, to review vehicle compliance (including, checking load securing devices and risk assessment for securing loads).

The Logistics Compliance Lead – Australia Pacific Indonesia confirmed that EWT only loaded single container loads as this was the only vehicle combinations that were available.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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2.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

☒ in full compliance with

The supply chain 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 programme for transport of cyanide.

Orica

Orica does not directly operate transport vehicles in its Papua New Guinea Supply Chain; this was undertaken by its contractors EWT and HVT and now only by HVT.

Despite this, Orica does ensure its transport contractors and subcontractor implement a safety programme for the transport of cyanide that ensures that cyanide is transported in a manner that maintains the integrity of the producer's packaging.

The Orica's Australia Supply Chain Audit (certified as compliant with the Code on 26 January 2015) addressed items such as cyanide packaging, labelling, container loading and security. The Papua New Guinea Supply Chain is a continuation of the Australia Supply Chain and containers are not opened until they arrive at the final destination. As a Code certified cyanide producer, Orica has systems in place to ensure their containers are labelled in accordance with the IMO DG code.

Orica's TMP states that agents, distributors and transportation agencies have a responsibility to ensure that a safe workplace is provided for its personnel and that of the contractors utilised. The policy provides guidance on fatigue management, securing of loads, preventative maintenance, vehicle inspections, drug abuse prevention programmes and procedures to suspend transportation due to changed conditions.

Where subcontractors are utilised by contracted carriers, the Orica TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed. The assessment of transportation agencies is via the Carrier Assessment, which a self-assessment and external assessment.

East-West Transport

The Convoy Report includes a Convoy Preparation Checklist which requires the following related items to be checked related to loads and packaging.

The Logistics Compliance Lead – Australia Pacific Indonesia confirmed that there are no regulations or regulatory authority within PNG for the transport of dangerous and hazardous good so no placarding of trucks or containers is required. Despite this EWT do not interfere with placarding on containers or isotainers when they arrive in PNG.

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EWT's Convoy report includes checks that cover for the following items:

- Vehicle inspections as part of the prestart checklist
- Ensuring the mechanic
- Inspecting and checking loads
- Tracking and communicating route changes
- Confirming fitness for work, including fatigue and breathalyser.
- Provision of documentation to Orica and EW offices.

EWT did not subcontract the transportation of cyanide within the scope of this audit.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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2.1.5 Transport Practice 1.5

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

☒ in full compliance with

The supply chain 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 isotainers or liquid isotainers) 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 substance 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 either the Port of Brisbane.

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

East West Transport

EWT did not transport cyanide by sea within the scope of this audit.

Hidden Valley Transport

HVT do not transport cyanide by sea within the scope of this audit.

Swire Shipping

The Due diligence identified that Swire 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.

ANL Shipping

The Due diligence identified that ANL transported cyanide in compliance with the Dangerous Goods Code of the International Maritime Organisation. The due diligences specifically referenced provisions of the Dangerous Goods Code that are required to be addressed under this question.

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Port of Lae and Lae Port Services

Orica conducted Due Diligence Reviews of the Port of Lae on 12 April 2016 and Port Services on 14 April 2016. The due diligence assessments were compiled through physical visits, interviews and discussions with appropriate personnel and review of applicable documentation.

The Port of Lae due diligence determined that based on the information provided, the site inspection and past experience with the Port, the Port of Lae is suitable for Orica to use as a port of entry for cyanide transport to Papua New Guinea.

The due diligence confirmed that Lae Port Services has in place a safety management system, procedures to identify and mitigate risk, maintain their equipment, implements and tests their emergency response plan, provide a secure site and train their employees in the safe handling of dangerous goods.

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2.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

☒ in full compliance with

The supply chain 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 does not employ transport drivers or directly operate transport vehicles; this is undertaken by its contractors EWT and HVT and now only by HVT.

Despite this, Orica does require its transport contractor vehicles have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders. Orica's Tracking of Shipments procedure requires Orica and its contracted transportation agencies to maintain, as a minimum, any electronic tracking system and lists what the system shall provide. There is allowance to not to have an electronic system and this the requirements that shall be met in these instances.

Orica has installed a GPS unit to each of its sparge isotainers to allow them to be tracked worldwide from Orica's Yawun facility. The units and batteries are maintained and replaced as part of the sparge isotainer maintenance programme conducted by Orica.

Orica does require its transport contractors' communication equipment (GPS, mobile phone, radio, pager, etc.) is periodically tested to ensure it functions properly. Orica's GPS unit is tested through utilisation.

Orica does require its transport contractors' communication blackout areas to have been identified and ensure special procedures are implemented for the blackout areas. This process is undertaken during the route assessment process.

Orica does require its transport contractor implements systems or procedures to track the progress of cyanide shipments.

Orica does require its transport contractors to implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. As an integral facet of security during transport, tracking methodologies should be employed.

Orica does require its contractors carry records indicating the amount of cyanide in transit and Material Safety Data Sheets (MSDSs) are available during transport.

Where subcontractors are utilised by contracted carriers, TMP notes no subcontractors are to be engaged by any prime contractor without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed. The assessment of transportation agencies is via the Carrier Assessment which enables a self-assessment and external assessment.

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East West Transport (EWT)

A review of EWT's convoy report provides evidence of the following:

- That tracking of convoys does take place. The EWT convoy communicates with the East West control room.
- That mobile phones are checked to ensure they contain enough credit before beginning a journey. EWT radio checks were completed and signed off on. Both radios and phones are also checked through constant use.
- The convoy is tracked from the EWT control room using phone and radio communications which are recorded on the Convoy Report.

The Logistics Compliance Lead – Australia Pacific Indonesia confirmed that during engagement the EWT vehicles carried MSDSs for solid and liquid sodium cyanide and hydrogen cyanide gas.

EWT do not subcontract the transportation of cyanide within the scope of this audit.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

Swire Shipping

Swire do not handle any sodium cyanide during transport. This is undertaken by stevedoring companies at the departure and destination ports. Due diligences were conducted by Golder Associates in June 2016 on behalf of Orica. The due diligence noted that Swire vessels have continuous means of tracking and communication during their voyages. Swire has their own in-house tracking systems for tracking freight, which is linked by the container number and Bill of Lading (BOL) number. Communication equipment is tested through continuous use.

Chain of custody documentation is used by Swire to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Material Safety Data Sheets (MSDS), which identifies the location and content of each container on the vessel.

A copy of the MO 41 is provided to Swire for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. Based on the information contained within the MO 41, the PIL tracking and monitoring system now records the UN classification (UN 1689), Dangerous Goods Class 6 and that the product is a marine pollutant. The MSDS is included with the MO 41.

ANL Shipping

ANL do not handle any sodium cyanide during transport. This is undertaken by stevedoring companies at the departure and destination ports. Due diligences were conducted by Golder Associates in June 2016 on behalf of Orica. The due diligence noted that ANL vessels have continuous means of tracking and communication during their voyages. ANL has their own in-house tracking systems for tracking freight, which is linked by the container number and Bill of Lading (BOL) number. Communication equipment is tested through continuous use.

Chain of custody documentation is used by ANL to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Material Safety Data Sheets (MSDS), which identifies the location and content of each container on the vessel.

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All goods classified as "hazardous" by international regulation (IMO DG Code) or national regulations (49CFR for the USA) carried under a CMA CGM Bill of Lading (or associate company) are controlled by one of their five "hazardous desks" (Marseilles, Le Havre, Hong Kong, Melbourne and Norfolk). The requirement for management of hazardous cargo is initiated when hazardous cargo is booked into the container booking system and ensures shipments meet the IMO DG Code requirements.

A copy of the MO 41 is provided to ANL for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. Based on the information contained within the MO 41, the PIL tracking and monitoring system now records the UN classification (UN 1689), Dangerous Goods Class 6 and that the product is a marine pollutant. The MSDS is included with the MO 41.

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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.

☒ in full compliance with

The supply chain is

☐ in substantial compliance with

Transport Practice 2.1

☐ 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 2.1 that requires transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Orica

Storage along the supply chain does occur at the Port of Lae. It is not directly managed by Orica.

East-West Transport

During the duration of the recertification Audit, Orica ceased using EWT on 22 March 2015. Prior to this storage did occur at the EWT Lae Depot in a dedicated storage facility for up to three days while convoy logistics are finalised. There was no evidence able to be provided related to this.

Hidden Valley Transport

Storage does/does not occur as part of the HVT transport.

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

Swire Shipping

Depending on weather, cargo types and other operational matters, shipping lines may tranship their cargo from one vessel to another. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery. Such trans-shipping does occur with Orica's sodium cyanide. Orica has no control over when and where this happens, but through its due diligence investigations has satisfied itself that the shipping lines used (Swire) undertake the shipping of the product in accordance with the *International Maritime Dangerous Goods Code* (IMO DG Code) and in a professional manner. This extends to the selection of terminals for trans-shipping.

Swire operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

ANL Shipping

Depending on weather, cargo types and other operational matters, shipping lines may tranship their cargo from one vessel to another. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery. Such trans-shipping does occur with Orica's sodium cyanide. Orica has no control over when and where this happens, but through its due diligence investigations has satisfied itself that the shipping lines used (ANL) undertake the shipping of the product in accordance with the *International Maritime Dangerous Goods Code* (IMO DG Code) and in a professional manner. This extends to the selection of terminals for trans-shipping.

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ANL operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

Port of Lae and Lae Port Services

Orica conducted a Due Diligence Review of the Port of Lae on 12 April 2016. The due diligence confirmed that:

- Isotanks are labelled with information panels notifying that cyanide is present in the area.
- The port has designated smoking areas which are away from where the cyanide is being handled.
- Personal protective equipment is required to be worn at the port include: hard hat, safety boots, high visibility shirt/vest.
- There is a current security plan that prevents unauthorised access to cyanide, including security guards at entrances and exits.
- There is an overarching container storage plan. Segregation of dangerous goods is completed in consultation with the stevedores. Containers are stored with other dangerous goods and appropriately segregated.
- All sodium cyanide containers and isotanks are labelled with emergency information panels for transport by sea from Australia.
- When sodium cyanide is held at the port, containers are stored outside so inadequate ventilation is not a risk.
- Spill kits are available in the Port of Lae. There is also a spill trailer that can be moved around the site.

Orica conducted a Due Diligence Review of the Lae Port Services on 14 April 2016. The due diligence confirmed that:

- Isotanks are labelled with information panels notifying that cyanide is present in the area.
- The port has designated smoking areas which are away from where the cyanide is being handled.
- Personal protective equipment is required to be worn at the port include: hard hat, safety boots, high visibility shirt/vest.
- There is a secure fence surrounding the boundary on all sides except the waterfront. Security is posted at all entries and exits to the site. The waterfront is also patrolled. Cars entering the site require a pass to gain entry.
- Segregation of dangerous goods is completed in accordance with the "Dangerous Goods & Combustible Liquids Storage Compatibility Chart" that is provided in each forklift.
- When sodium cyanide is held at the port, containers are stored outside so inadequate ventilation is not a risk.
- Inside the containers, sodium cyanide is packed in lined FIBCs which are packed inside wooden boxes. As such, the risk of water coming in contact with the sodium cyanide briquettes is minimal.

When spills and leaks are identified, the event is escalated to the supervisor on duty, who further escalates to management. Management then develop a plan to manage the situation. Spills kits are available on site. Typically a barrier would be built to prevent a spill getting to the waterway.

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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 supply chain 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

Orica has developed detailed emergency response document (ERG) to provide emergency response guidance for specific mine site, storage facilities and transport incidents involving spillage of Orica Product.

The transport companies involved in the shipment of cyanide are required to have plans that cover spill response outside of the Yarwun gate to the end user. Orica provide assistance and support in this role through the ERG, a 24 hour call centre (Emergency Response Service) and product specialists based at the Yarwun Facility.

Orica has clearly assigned responsibilities for emergency response. The role of Orica is largely limited to one of product stewardship through notification and provision of technical advice rather than physical containment and management of any release. This is particularly relevant where rail and port authorities are involved. The emergency documentation is appropriate for the transportation routes within PNG.

The ERG is applicable to the management of an emergency involving Orica supplied sodium cyanide solid or liquid product along the supply chain. Although the plan does not specifically consider all aspects of the transport infrastructure, the emergency response approach outlined in the ERG is flexible enough to accommodate variations in transportation infrastructure. The guide also contains procedures for different types of transport containers, freight containers with IBCs and isotainers.

The ERG does include descriptions of response actions for anticipated emergency situations. The ERG details the initial actions to be undertaken, including the interactions with emergency service providers such as police and fire brigade, determining if the leak is cyanide and preventing the spread of contamination.

Appendix 3 (Orica Response to a Report of a Cyanide Incident) of the ERG details the initial actions to be undertaken, including the interactions with emergency service providers such as police and fire brigade, determining if the leak is cyanide and preventing the spread of contamination.

East-West Transport

As part of the Carrier Assessment Orica reviewed the Emergency Management procedures and processes of EWT. This includes confirming the presence of an Emergency Management Plan (that includes defining roles and responsibilities, listing current contact details, completing emergency response exercises, completing periodic reviews, detailing key response scenarios, detailing internal and external reporting procedures, requirement for adequate emergency equipment for the carrier, trucks and escort vehicles, cyanide specific remediation and response). Some of these issues were not addressed appropriately by EWT and Orica provided guidance on how to address the deficiencies.

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Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

Swire Shipping

Swire operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

ANL Shipping

ANL operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

ANL operates in compliance with the International Safety Management (ISM) Code which provides an international standard for the safe management and operation of ships, and for pollution prevention, which ANL and its vessels have duly complied with.

In accordance with the ISM Code, ANL has developed, implements and maintains a Security Safety policy and management system to ensure safe operation of the ships and protection of the environment in compliance with the relevant international and flag state legislation. This includes procedures for reporting accidents, or to prepare for and respond to emergency situations.

Port of Lae and Lae Port Services

Orica conducted a Due Diligence Review of the Port of Lae on 12 April 2016. The due diligence confirmed that:

- The Port of Lae has an emergency management plan in place. The plan identifies 3 evacuation muster points.
- Communication is completed through the use of radios.
- The emergency response plan captures several scenarios that could occur including tsunami and earthquake. Tsunami panels have also been erected in front of the berth.
- In the event of an emergency involving cyanide, PNG Ports will evacuate the area and contact Orica to assist in the emergency.

Orica conducted a Due Diligence Review of the Lae Port Services on 14 April 2016. The due diligence confirmed that:

- In the event of an emergency an air horn is sounded.
- Port Services have developed a "grab bag" for use in the case of an emergency. This bag includes an emergency contacts list (last updated 10/09/2015) and a list of wardens.

Port Services partake in the Port User Group meetings that PNG Ports facilitate. During these meetings the relationships between Port Services, police and the fire brigade are maintained due to the interactions that take place.

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2.3.2 Transport Practice 3.2

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

☒ in full compliance with

The supply chain 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 they designate appropriate response personnel and commit necessary resources for emergency response.

Orica

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. To maintain this capacity, Senior Orica ERS personnel or their delegates conduct training of new Orica ERS coordinators. After the training is completed, the ERS coordinator moves onto a validation programme where all calls are validated with an experienced team member immediately following the call. ERS coordinators are not progressed onto each level (i.e. from training, to supervised call handling, to call validation programme, to a fully trained coordinator) until the manager is satisfied that each level is achieved to a more than satisfactory standard.

The TMP describes the minimum training standards expected by Orica in the transportation of cyanide. Emergency response is one of the items that road transport drivers and storage personnel are required to undertake. The TMP also notes that the prime contractor is responsible for ensuring that all personnel meet the above training requirements.

The ERG clearly identifies the key Orica roles and responsibilities that will need to be addressed in the carrier's emergency response plan.

Orica's Mining Chemicals Systems Incident Management Plan outlines roles and responsibilities for the Mining Chemicals Incident Management Team.

Orica provides a list of all emergency response equipment that should be available during the transport. Section 3.15 of the TMP lists the minimum recommended emergency equipment for vehicles transporting sodium cyanide. This section also includes additional information related to emergency equipment in convoy and how to assess new customers.

Orica does not operate any transport equipment in the scope of this audit. However, Orica has implemented processes to check that contractors transporting the material have necessary equipment including during transport. Through Orica's Carrier Assessment contractor's emergency response equipment is checked for appropriateness for the task.

Orica does not directly operate transport vehicles or storage facilities along its Papua New Guinea Supply Chain.

Orica has developed and provided initial and periodic refresher training covering cyanide awareness and emergency response to its transport contractors.

Orica does not directly operate transport vehicles or storage facilities along its Papua New Guinea Supply Chain.

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As noted in 3.2.4, Orica has implemented processes to check that contractors transporting the material have necessary equipment including during transport.

East-West Transport

As part of the Checkpoint assessment Orica reviewed EWT Training and Competency. This includes an assessment of training matrix and records. Training includes, first aid, equipment competency, Orica SHE induction, dangerous goods, fire extinguisher.

As detailed in 3.1.1 part of the Checkpoint assessment Orica also review the Emergency Management procedures and processes. This includes confirming the presence of an Emergency Management Plan (that includes defining roles and responsibilities, listing current contact details, completing emergency response exercises, completing periodic reviews, detailing key response scenarios, detailing internal and external reporting procedures, requirement for adequate emergency equipment for the carrier, trucks and escort vehicles, cyanide specific remediation and response).

Some of the issues were not addressed appropriately by EWT and Orica provided guidance on how to address the deficiencies.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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2.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

☒ in full compliance with

The supply chain 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 that they develop procedures for internal and external emergency notification and reporting.

Orica

There are procedures and current contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency.

The Orica ERG includes the contact number for the ERS hotline. The Orica ERS contact list has contact details for Orica and third party storage and transport providers.

There are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current Customers are advised through Orica's Customer Service team or via their account manager. The ERS contact list is reviewed every six months and as changes occur.

East-West Transport

As part of the Carrier Assessment Orica reviewed EWTs Emergency Management procedures and processes. This includes confirming the presence of an Emergency Management Plan that includes defining roles and responsibilities, listing current contact details, detailing key response scenarios, detailing internal and external notification reporting procedures and advising external responders of their roles and mutual aid.

Some of the issues were not addressed appropriately by EWT and Orica provided guidance on how to address the deficiencies.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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2.3.4 Transport Practice 3.4

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

The supply chain 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:

The Orica Papua New Guinea Supply Chain is in FULL COMPLIANCE with Transport Practice 3.4 requiring the operation develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

Orica

The ERG includes procedures for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management of spill clean-up debris. These procedures are for a variety of scenarios involving:

- Dry sodium cyanide spill – inside building/storage facility.
- Dry sodium cyanide spill – outside building/storage facility.
- Dry sodium cyanide spill – inside shipping container.
- Shipping container decontamination.
- Handling wet sodium cyanide.
- Sodium cyanide spill to waterway.
- Response to a fire in the vicinity of stored cyanide.
- Roll-Over of Shipping Container.

The Guide states that:

Orica Mining Chemicals subscribes to the recommendations of the International Cyanide Management Code in that no chemicals are to be added to a flowing waterway in the event of a cyanide spill as these may only exacerbate the situation with their own toxicity characteristics.

East-West Transport

As part of the Carrier Assessment Orica reviewed EWTs Emergency Management procedures and processes. This includes confirming the presence of an Emergency Management Plan that includes systems with the capacity to contain any spilled materials and minimise the extent of a release and procedures for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and or disposal of spill clean-up debris.

Some of the issues were not addressed appropriately by EWT and Orica provided guidance on how to address the deficiencies.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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2.3.5 Transport Practice 3.5

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

☒ in full compliance with

The supply chain is

☐ in substantial compliance with

Transport Practice 3.5

☐ 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 3.5 requiring the operation periodically evaluate response procedures and capabilities and revise them as needed.

Orica

There are provisions for periodically reviewing and evaluating Orica's emergency documentation and they are being implemented.

The ERG is a controlled document that shall be reviewed as a minimum on a biennial basis. The last review was in May 2016. Prior to this it was October 2014 and November 2013.

The Mining Chemicals Systems Incident Management Plan includes a provision to conduct a review of procedures post-incident.

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

The Mining Chemicals Systems Incident Management Plan provides the provision for conducting mock emergency drills at a divisional level within Orica.

Orica has conducted a Table Top mock emergency drill with EWT and HVT.

East-West Transport

EWT, Orica and Morobe Mining completed a desktop drill in 2013 related to a road accident where a convoy truck ends up in the creek bank.

As part of the Carrier Assessment Orica reviewed EWTs Emergency Management procedures and processes. This includes confirming the presence of an Emergency Management Plan that includes periodically reviewing the plan and if it is being done; conducting mock exercises at least annually; revising the plan based on learnings from the drills.

These issues were addressed appropriately.

Hidden Valley Transport

HVT is a transport signatory to the ICMI Cyanide Code and were certified in full compliance of the ICMC on 25 April 2016 and pre-operationally certified in compliance with the ICMC on 15 May 2014.

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3.0 DUE DILIGENCE REVIEW

3.1 Ports

Orica conducted due diligence reviews of the Port of Lae and Lae Port Services operations utilised as part of their Papua New Guinea Supply Chain on 12 and 14 April 2016 respectively. This due diligence was reviewed in June 2016.

The reviews were conducted by Jonathan Regan, Logistics Compliance Lead – Australia Pacific Indonesia and reviewed by Mike Woods who meets the ICMI requirements for a Transport Expert.

The following items were addressed within the due diligences:

- Safety Management Systems
- Risk Management
- Equipment
- Emergency Response
- Security
- Training

The due diligence reviews were 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.

3.1.1 Port of Lae

Orica uses two major shipping line (ANL and Swire) to transport its shipments to the Port of Lae in PNG.

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 arris for customs clearance.

Road Transportation from the Port of Lae is covered under code certified transportation in PNG.

Orica's product is packaged into composite IBCs consisting of a 1300 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 IMO DG 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 stevedore's management systems which assist 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.

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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.

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.

The due diligence determined that the port is operating in a safe and responsible manner and is suitable for the transit of sodium cyanide.

3.1.2 Lae Port Services

Lae Port Services is part of Steamships Trading Company and is one of the three stevedoring providers at the Port (along with United Stevedors and Riback).

Lae Port Services is situated within the perimeter of the Port of Lae which is controlled by PNG Ports Corporation.

Lae Port Services have in place a safety management system, identify and mitigate risk, maintain their equipment, have and test their emergency response plan, work on a secure site and train their employees in the safe handling of dangerous goods.

Based on the information provided, the site inspection and past experience with Port Services at Lae, Port Services at Lae has been assessed as suitable for Orica to use to discharge sodium cyanide containers and isotanks without the need for additional risk mitigation steps to be implemented.

3.2 Shipping

Golder Associates, on behalf of Orica, conducted the following due diligence assessments of shipping operations utilised as part of their Papua New Guinea Supply Chain:

- ANL Shipping Due Diligence Review, Golder Associates, 16 June 2016
- Swire Shipping Due Diligence Review, Golder Associates, 16 June 2016.

The reviews were conducted by Ed Clerk. Ed meets the ICMI requirements for a Transport Expert.

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The following items, as detailed in the ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (October 2009), were addressed within the due diligence:

- Introduction
- ICMC Transport Verification Protocol Assessment
 - Transport Practice 1.1 (Questions 1-4 and 6)
 - Transport Practice 1.5 (Question 1, Items g – i)
 - Transport Practice 1.6
 - Transport Practice 2.1
 - Transport Practice 3.1
- Conclusion
- References.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (October 2009) was used to guide the due diligence assessment. Due to access restrictions, the due diligence was conducted as a desktop process using information obtained from online resources, experience, previous consignor due diligence reviews, and interviews with other consignors.

3.2.1 ANL Shipping

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

The due diligence review concluded:

Based on the evidence reviewed, this due diligence did not find issues of concern in regards to ANL's management of solid sodium cyanide product. This assessment should not be a final acceptance of ANL for future work; rather it is recommended that Orica continue to review and monitor ANL's performance and implement an adaptive management process.

3.2.2 Swire Shipping

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

The due diligence review concluded:

Based on the evidence reviewed, this due diligence did not find issues of concern in regards to Swire's management of solid sodium cyanide product. This assessment should not be a final acceptance of Swire for future work; rather it is recommended that Orica continue to review and monitor Swire's performance and implement an adaptive management process.

3.3 Auditor Review of Due Diligence

The due diligence reviews were found by the Auditor to sufficiently evaluate the shipping lines and port operations, within the constraints of access and limited influence, and additional management measures by the consigner were not considered necessary.

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4.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled – “Important Information Relating to this Report”, which is included in Appendix A of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

5.0 REFERENCES

<http://www.cyanidecode.org/sites/default/files/pdf/OricaAustraliaSCTransportSAR2014.pdf>

<http://www.cyanidecode.org/signatory-company-categories/hidden-valley-transport-papua-new-guinea>

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27 July 2016

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Report Signature Page

GOLDER ASSOCIATES PTY LTD

Mike Woods
ICMI Lead Auditor

MCW_BJL/EWC/hsl

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APPENDIX A

Important Information

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