April 2018

INTERNATIONAL CYANIDE MANAGEMENT CODE TRANSPORT AUDIT

Orica Australia Pty Ltd Transport Recertification Audit - Summary Audit Report New Zealand Supply Chain

Submitted to:
International Cyanide Management Institute
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REPORT

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Distribution:

1 Copy – International Cyanide Management Institute (+1 Electronic)
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Golder Associates

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1.0 INTRODUCTION

1.1 Operational Information

Name of Transporter:	Orica Australia Pty Ltd.
Name of Transport Owner:	Not Applicable.
Name of Transport Operator:	Orica Australia Pty Ltd.
Name of Responsible Manager:	Mr Joe Quagliata, Logistics Lead Cyanide
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1.2 Description of Operation

1.2.1 Orica

Orica is the consignor and subcontracts Mainfreight for the road transportation from the Ports in New Zealand to customer mine sites.

1.2.2 Mainfreight (Owens Transport)

Mainfreight was founded in 1978 and is a Global Supply Chain provider, specialising in less than container load (LCL) freight. The company has over 200 branches worldwide, principally in New Zealand, Australia, Asia, Europe and the United States, and provides over 20,000 customers with a full range of logistics requirements.

In 2003 Mainfreight bought a 79.6% stake in Owens Group Limited and consolidated the operations back to the core activity of transport and international freight forwarding. In July 2005, Mainfreight acquired the remaining shares.

Owens Group Limited is a fully integrated service company. The business incorporates a number of different brands with activities ranging from door-to-door domestic, international transportation and managed warehousing, through to specialist dangerous goods and temperature-controlled transport and warehousing.

Mainfreight uses Owens Group Limited's transport business unit, Owens Transport (Owens), in New Zealand to transport Orica's cyanide.

1.3 Transit Storage

Within the scope of this audit, there were trans-shipping depots and interim storage sites associated with port operations where containers of cyanide are removed from vessels, temporarily stored and then placed on road vehicles for the next part of the journey. These transit storages or trans-shipping depots are managed by the relevant port authorities and due consideration of relevant protocol requirements has been made through the due diligence process which are now contained within the Global Marine Supply Chain.

The primary transit storage occurs at Chemical Care Depot in Otahuhu, Auckland. The Chemical Care Depot in Auckland is a regulated as a Major Hazard Facility under New Zealand legislation. Isocontainers are collected directly from the Port of Auckland and brought to the facility and unloaded by Mainfreight using a swing lifter to remove the isocontainer from the transport vehicle and place in the designated storage location.

Prior to October 2016, storage in transit had occurred intermittently at the Mainfreight Depot Facility located in Tauranga. The facility is used for ad-hoc storage of full and returned empty isotainers where they cannot be delivered direct to the mine site or port respectively. In these instances, storage is typically limited to 4 days.

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1.4 Auditors Findings and Attestation

The 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 incidents or releases were noted as occurring during the audit period.

Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Technical Specialist		03 April 2018

1.5 Dates of Audit

The Recertification Audit was undertaken over two days between 19 and 20 September 2017.

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 TRANSPORT 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 is	☐ in substantial compliance with	**Transport Practice 1.1**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Orica New Zealand Supply Chain is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes to be selected to minimise the potential for accidents and releases.

Orica has developed procedures and implemented them, in conjunction with Mainfreight, to guide the selection of transport routes to minimise the potential for accidents and releases, or the potential impacts of accidents and releases. These procedures require Orica and Mainfreight to consider, among other things, population density, infrastructure, road pitch and grade and the presence and prevalence of watercourses and fog during the assessment process.

Mainfreight, through Orica, evaluates the risks of selected cyanide transport routes and take the measures necessary to manage these risks. The evaluation and selection of the route/s is undertaken through a risk assessment process conducted in accordance with Australian Standard *AS 31000: 2009 Risk Management.* The risk assessments examined showed evidence of a detailed assessment process. Mitigation measures used to reduce risks to acceptable levels were detailed in the risk assessment documentation for the specific routes.

Mainfreight, in conjunction with Orica, has implemented a procedure and process to periodically re-evaluate routes used for cyanide deliveries. An Orica route feedback procedure requires its contractors to obtain feedback from transportation activities and provide it to Orica for the appropriate assessment and follow up on actions, as appropriate. In addition, the Mainfreight procedure for route assessment notes that route assessments will be reviewed when there is a route change, an incident, or biannually. Feedback on route conditions is also to be provided by drivers to Mainfreight through submittal of the *Cyanide Drivers Trip Log*.

Mainfreight, in conjunction with Orica, has documented the measures taken to address risks identified with the selected routes. This has been achieved through a documented route risk assessment process for each route, which outlines existing controls and additional mitigation measures for identified hazards along the route.

Mainfreight and Orica seek input from stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures. The community is not directly consulted. Orica's *Selection of Transport Routes* procedure notes that the transportation methods to be utilised on a particular route are to consider regulatory requirements and competent authority instructions. Direct engagement of communities by Orica and Mainfreight within New Zealand has not occurred because:

- The sole Orica customer, Newmont Waihi Gold, extensively engages with the local community
- The community was not designated a role as part of the planned response to an emergency involving cyanide negating the need for community consultation on this issue

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- The risk management measures implemented for the cyanide transportation are considered a high standard and negate the need for community consultation in the development of such measures.

Where routes present special safety or security concerns, Orica ensures its transporters use convoys, escorts or other additional safety or security measures to address the concern. Through an operational area risk assessment to determine the need to transport cyanide in convoys, Orica determined that the level of risk within Australia and New Zealand did not warrant the use of convoys. Despite this, security measures are implemented by Orica for transportation of cyanide within New Zealand, including the use of locked and sealed containers, and constant monitoring of the location of isotainers using a GPS tracking system.

The notification of external responders, medical facilities and communities of their roles and/or mutual aid during an emergency response is undertaken by Orica.

Orica contracts all transport within the scope of this audit to Mainfreight and their wholly owned subsidiary Owens. Orica's *Transport Management Plan* 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. Orica has a Service Level Agreement with Owens, which conforms to this requirement. In addition, the Orica *Transport Management Plan* notes no subcontractors (such as owner drivers) are to be engaged by Mainfreight without the prior approval of Orica and an appropriate assessment of the proposed subcontractor capabilities having been performed. Such an assessment has been conducted and Orica has granted approval for their use as subcontractor drivers. Mainfreight and Owens have Individual Employment Agreements with these drivers, which require the drivers to follow all policies, systems and procedures put in place by Mainfreight or Owens.

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:

Orica New Zealand 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.

Mainfreight use only trained, qualified and licensed operators to operate its transport vehicles. All Mainfreight drivers undergo medicals, company inductions and task specific training. Prior to commencement of cyanide transport activities, all drivers will go through Orica's *Sodium Cyanide Safety Guidelines* presentation, obtain appropriate dangerous goods certification and be given training in the *Emergency Response Plan*.

Mainfreight and Orica ensure personnel operating cyanide handling and transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures. Orica requires that all drivers undergo sodium cyanide awareness and emergency response training before they are allowed to transport cyanide. As mine site personnel undertake the sparge unloading, Mainfreight drivers are not required to undertake sparge unloading training.

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Orica contracts all transport within the scope of this audit to Mainfreight and their wholly owned subsidiary Owens. Orica's *Transport Management Plan* 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. Orica has a Service Level Agreement with Owens, which conforms to this requirement. In addition, the Orica *Transport Management Plan* notes that no subcontractors (such as owner drivers) are to be engaged by Mainfreight without the prior approval of Orica and an appropriate assessment of the proposed subcontractor capabilities having been performed. Such an assessment has been conducted and Orica has granted approval for their use as subcontractor drivers. Mainfreight and Owens have Individual Employment Agreements with these drivers, which require the drivers to follow all policies, systems and procedures put in place by Mainfreight or Owens.

2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

	☒ **in full compliance with**	
The Supply Chain is	☐ in substantial compliance with	**Transport Practice 1.3**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Mainfreight only uses equipment designed and maintained to operate within the loads it will be handling when transporting cyanide.

Mainfreight has procedures in place to verify the adequacy of the equipment for the load it must bear. Checks are completed as part of the scheduled servicing, daily checks and Certificate of Fitness inspections. The scheduled servicing includes checks on equipment to identify signs of stress or overloading. In addition, All vehicles and trailers within New Zealand must undergo six monthly Certificate of Fitness assessments as part of road traffic regulations. These inspections include the following with regards to load:

- Heavy Vehicles
  - Vehicle structure
  - Suspension systems
  - Towing connections.
- Trailers
  - Load restraints
  - Certificate of loading.

Mainfreight and Orica, have procedures in place to prevent overloading of the transport vehicle being used for handling cyanide. Mainfreight maintains a spreadsheet, which is provided to Orica, of transport prime movers and trailers dedicated to the transport of Orica freight containers, liquid isotainers and sparge isotainers. The spreadsheet includes the design capacities of the vehicles and trailers. This enables carrying capability to be determined for different configurations that may be utilised.

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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:

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

Mainfreight and Orica have handling and inspection procedures to ensure that cyanide is transported in a manner that maintains the integrity of the producer's packaging. Mainfreight has checklists in place that require drivers to inspect the integrity of the containers and seals. The inspection is conducted when the driver turns the twist locks to secure the container onto the trailer. The seals are substantial non-reusable locks, which are numbered. The isotainer number and seal numbers are recorded onto the checklists by the Driver. In addition, Orica operates a consignment note or delivery docket system whereby transport drivers are required to cross check the container and seal numbers with what is recorded on the delivery paperwork. The driver is to sign the consignment note, confirming that the numbers are correct and to obtain a customer signature confirming that the numbers have been cross checked upon delivery of the product.

Mainfreight, in conjunction with their owner drivers and Orica, uses placards or other signage to identify the shipment as cyanide, as required by local regulations and international standards. Vehicle placarding consists of Emergency Information Panels on the side and rear of the container, and a Class 6 Dangerous Goods placard on the front and the vehicle.

Mainfreight implements a safety program for cyanide transport that includes:

- A documented daily vehicle checklist that covers the prime mover and trailer with checks of vehicle roadworthiness, dangerous goods requirements, PPE, communication equipment, etc.
- A preventive maintenance programme for prime movers and trailers (i.e. services after 10,000 km, 15,000 km and every 6 months).
- The limitation on driver hours via the tracking of daily run sheets and driver hours logbooks.
- Cyanide is stowed into sparge isotainers by Orica. Isotainers are secured using twist locks, which are designed and constructed to international transport standards. This twist locks are checked by the driver prior to departure from the loading area.
- Procedures by which transportation can be modified or suspended.

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- Drug and alcohol policy and testing regime.
- The retention of records documenting that the above activities have been conducted.

Orica contracts all transport within the scope of this audit to Mainfreight and their wholly owned subsidiary Owens. Orica's *Transport Management Plan* 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. Orica has a Service Level Agreement with Owens, which conforms to this requirement. In addition, the Orica *Transport Management Plan* notes no owner drivers are to be engaged by Mainfreight without the prior approval of Orica and an appropriate assessment of the proposed owner driver capabilities having been performed. Such an assessment has been conducted and Orica has granted approval for their use as owner driver drivers. Mainfreight and Owens have Individual Employment Agreements with these drivers, which require the drivers to follow all policies, systems and procedures put in place by Mainfreight or Owens.

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:

Transport Practice 1.5 requiring the operation develop and implement a safety programme for transport of cyanide is NOT APPLICABLE.

Orica does not transport consignments of cyanide by sea within the scope of this audit. Ports and Shipping components of the Supply Chain during the previous audit are now covered under Orica Global Marine Supply Chain.

No consignments of cyanide are transported by air within the scope of this audit. All consignments transported by Mainfreight are by road.

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:

Orica New Zealand Supply Chain is in FULL COMPLIANCE with Transport Practice 1.6 requiring the operation track cyanide shipments to prevent losses during transport.

Mainfreight and Orica have means to communicate with the transport company, the cyanide producer or distributor and/or emergency responders. Mainfreight vehicles use mobile phones and radio transmitters to communicate with the company and emergency responders. Communication between Mainfreight and Orica is via email, telephone and fax. All communications with the product customer is through Orica.

Communications equipment is checked by the Mainfreight drivers at the start of a shift (via the pre-start checklist) and through continuous use.

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Along the routes used by Mainfreight to transport cyanide, one communications blackout area of approximately 10 km in length exists. Mainfreight has a Remote Area Communications procedure in place whereby drivers must contact the Operations Supervisor prior to entering the area and upon exiting the area. Should communications not be regained, there are a series of escalating steps with the procedure for the Operations Supervisor to follow.

Mainfreight and Orica have procedures to track the progress of cyanide shipments. Mainfreight has a GPS tracking system in its vehicles to be used for cyanide transport. In addition, Orica has a GPS tracking system installed on its sparge units to enable Orica to keep track of journey progress and location on mine sites independently of its transporter.

Mainfreight and Orica have appropriate inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. Inventory controls are the primary method of preventing product loss during shipment. These controls include the following:

- All products are weighed by Orica when placed into isotainers, IBCs and freight containers
- Solid sparge cyanide is dyed so that any loss can be readily identified
- Consignments are rigorously identified and documented with each sparge isotainer is identified by a unique number
- All sparge isotainers are locked with seals and the seal numbers recorded and checked by the consignee. Seals are also checked at transfer locations and on route
- The identifying container numbers are transmitted to the consignee (Mainfreight) and are checked off by the Orica representative (Mainfreight) on arrival.

Shipping documentation indicating the amount of cyanide in transit and Safety Data Sheets (SDS) are available during transport

Under New Zealand law, transport companies are required to carry the following in the vehicle cabin:

- Load plan schedule of weights and quantities
- Emergency procedures guide
- Dangerous goods guide.

In addition, Orica requires that its transporters carry an SDS for its product on all vehicles during transit.

Orica contracts all transport within the scope of this audit to Mainfreight and their wholly owned subsidiary Owens. Orica's *Transport Management Plan* 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. Orica has a Service Level Agreement with Owens, which conforms to this requirement. In addition, the Orica *Transport Management Plan* notes no owner drivers (such as owner drivers) are to be engaged by Mainfreight without the prior approval of Orica and an appropriate assessment of the proposed owner driver capabilities having been performed. Such an assessment has been conducted and Orica has granted approval for their use as owner driver drivers. Mainfreight and Owens have Individual Employment Agreements with these drivers, which require the drivers to follow all policies, systems and procedures put in place by Mainfreight or Owens.

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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:

Orica New Zealand Supply Chain is in FULL COMPLIANCE with Transport Practice 2.1 requiring the storage of cyanide in a manner that minimises the potential for accidental releases.

Storage in transit occurred occasionally occur at the Mainfreight Depot Facility located in Tauranga, in these instances storage is typically limited to 4 days. Since October 2016 storage in transit has occurred at the Chemical Care storage facility in Auckland.

The facilities are used for ad hoc storage of full and returned empty isotainers where they cannot be delivered direct to the mine site or port respectively.

The Chemical Care facility has warning signs posted at the entry to the site altering works:

- That cyanide is present
- That smoking, open flames, eating and drinking are not allowed
- What personal protective equipment must be worn.

There is one designated location for the interim storage of cyanide at the facility. The isotainers are stored on a concrete surface in an open laydown area with perimeter fencing. Signage is displayed near the storage area and there is signage on the sides of the isotainer alerting workers to content.

There is signage on the sides of the isotainer alerting workers to content and the site emergency plan diagram details the location for cyanide.

There are security measures in place to prevent unauthorised access to cyanide, such as lockouts on valves and fenced storage of solids.

There is a perimeter fence surround in the premises with lockable gates. The isotainers have locks and metal cable seals installed to prevent access via the valves of the isotainer. At no time are the seals or locks removed prior to the point of discharge at the customers mine site.

Mainfreight inspect the containers at the time of collection at the port and this check includes locks and seals on the container.

At the Chemical Care facility cyanide is separated from incompatible materials such as acids, strong oxidisers and explosives to prevent mixing.

No acids or strong oxidisers were observed to be stored in proximity of the cyanide. Due to the amount of other dangerous goods stored at the site the premises is subject to regulatory oversight including separation distances for dangerous goods storage.

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Further, sodium cyanide is in solid form within the locked and sealed isotainer preventing mixing with incompatible materials.

Cyanide stored in a manner designed to minimise the potential for contact of solid cyanide with water. Cyanide is only stored at the site within the specially designed isotainers with locks and seals which minimise potential for contact of solid cyanide with water. At no time are the locks removed from the isotainers while in storage. Due to the amount of other dangerous goods stored at the site the premises is subject to regulatory oversight including separation distances for dangerous goods storage.

Mainfreight has an emergency response plan that considers the procedure in the event of a cyanide spill at the Mainfreight terminal. The procedure outlines specific responsibilities and steps for Mainfreight and applicable Emergency Services. The procedure includes covering drains with drain cover mats and isolating the area to minimise inadvertent spread of spilt product.

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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:

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

Mainfreight has a Transport Emergency Response Plan (TERP). The purpose of the TERP is to provide a planned response to support the emergency services in managing a transport emergency.

The management of cyanide related emergencies is an integrated approach between Mainfreight and Orica, which is reflected through the referencing of Orica's Emergency Response Guide (ERG) within the TERP for additional guidance on cyanide related emergencies.

The emergency response plans are appropriate for the selected transportation route to all delivery locations. The incidents covered include:

- Vehicle Breakdown
- Minor Vehicle Incidents
- Major Vehicle Incident, Product Loss of Containment, Fire or Injury.

The TERP does not consider the physical or chemical form of cyanide however the document directs the reader to contact Orica and refers to the ERG and the SDS.

The ERG details specific responses for transport scenarios and the physical and chemical form of cyanide. The guide provides an approach to transport emergency scenarios considered credible by Orica over their transport routes. These scenarios cover issues related to the form of the cyanide involved in the accident and its chemistry including what chemicals are suitable to use in remediation.

The plans do consider the method of transport. The TERP is based and developed around road transportation. Appendix 2 (Product Transportation and Storage) of the ERG details additional information on the method of transport. The specific emergency response guides detailed in Section 3 of the ERG consider the transportation of cyanide by road.

The plans consider all aspects of the transport infrastructure.

Orica and Mainfreight have undertaken route risk assessments from the Port of Tauranga to each mine delivery site and Orica has compiled route assessments that detail relevant transport infrastructure. The assessments were evaluated for:

- Load security.
- Potential for vehicular accidents.

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- Residential areas.
- Waterways.
- Possible impact of road blockages/diversions, etc.
- Quality and general conditions of the roads.

The plans consider the design of the transport vehicle. The TERP is based and developed around road transportation. Appendix 2 (Product Transportation and Storage) of the ERG details additional information on the design of the transport vehicle. The specific emergency response guides detailed in Section 3 of the ERG consider the design of the transport vehicle.

The plans include descriptions of response actions, as appropriate for the anticipated emergency situation for transportation. Section 5 of the TERP details the responsibilities for the following positions:

- Drivers
- Sub-contractors (owner drivers)
- Operations Supervisors
- Incident Responders
- Incident Coordinator
- Owens Transport Managers
- Owens Transport Projects Manager
- Owens Transport Safety Manager.

Responsibilities are detailed for first response as well as establishing control. The roles are responsibilities are also specific to the scenarios identified. Responsibilities specific to the drivers are also summarised within the Owens *Global Logistics Tankers Driver's Manual* which is carried within the truck.

The critical component of the emergency response process is the dedicated Orica ERS based in Melbourne. The ERG requires Orica ERS to be contacted in the event of emergency involving cyanide.

The plan does identify the roles of outside responders, medical facilities or communities in emergency response procedures. The primary outside responders in the TERP is the emergency services who are involved through the use of '111' in an emergency. The only other outside responder is Orica and the Orica ERS service.

The ERG is the primary reference for the roles of outside responders to an incident. Appendix 6 (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.

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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:

Orica New Zealand Supply Chain is in FULL COMPLIANCE with Transport Practice 3.2 requiring they designate appropriate response personnel and commit necessary resources for emergency response.

Mainfreight provides emergency response training for appropriate personnel. A training matrix outlines the training requirements of all personnel associated with cyanide transportation. Training in the TERP is deemed mandatory. In addition, those undergoing TERP training also site an Orica Sodium Cyanide Safety presentation.

The plans include descriptions of the specific emergency response duties and responsibilities of personnel. The TERP provides a description of the responsibilities for Drivers, Owner drivers, Operations Supervisors, Incident Responder, Incident Coordinator, Transport Manager, Projects Manager, Safety Manager and External Responders.

Mainfreight has a list of all emergency equipment that should be available during transport or along the transport route.

The transporter has available the necessary emergency response and health and safety equipment, including personal protective equipment during transport. Mainfreight maintains three sets of equipment. One set is located with the transport vehicle and two sets are maintained at the depot.

The transport vehicle operators receive initial and periodic refresher training in emergency response procedures including implementation of the TERP. The Projects Manger stated that training on the TERP is provided as part of the induction. Refresher training is provided whenever a new revision of the TERP is developed. In addition, transport personnel (including drivers) are included in periodic mock drills, which include assessing the implementation of the TERP and identifying lessons learnt. Lessons learnt are communicated to drivers via their supervisors.

Mainfreight has formal procedures in place to inspect emergency response equipment and assure its availability when required. This includes weekly inspections by a management representative.

Orica contracts all transport within the scope of this audit to Mainfreight and their wholly owned subsidiary Owens.

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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:

Orica New Zealand Supply Chain is in FULL COMPLIANCE with Transport Practice 3.3 requiring that they develop procedures for internal and external emergency notification and reporting.

The TERP requires notification of Emergency Services, Owens Operations Supervisor, the Orica ERS service and the receiver (Waihi Gold mine) in the event of a cyanide emergency during transport. Contact numbers for these are included in the TERP, which is carried by each driver.

There are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current.

Section 8 of the TERP tasks the Owens Safety Manager with checking the currency of contact details on a six monthly basis.

In addition, the TERP is at least annually, or after significant changes to the operation or identified deficiencies following exercises or incidents.

The key contact phone numbers are also detailed on the Route Assessment Form. The Route Assessments are reviewed and revised yearly, or if a route changes, and this will include a check of the phone numbers.

2.3.4 Transport Practice 3.4

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

	☒ **in full compliance with**	
The Supply Chain is	☐ in substantial compliance with	**Transport Practice 3.4**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Mainfreight do not undertake the remediation or recovery of cyanide. In the event of an emergency drivers are to contact emergency services and the Operations Supervisor. Mainfreight's management will then contact Orica's ERS. The Section 11 (Product Recovery/Site Remediation) of the TERP notes that Orica procedures are to be used for remediation.

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 cleanup debris.

The procedure does prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

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Section 3.6 *(Sodium Cyanide Spill in a Waterway)* of the *ERG* notes at the start of the procedure 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.*

2.3.5 Transport Practice 3.5

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

The Supply Chain is ☒ in full compliance with ☐ in substantial compliance with ☐ **not in compliance with** **Transport Practice 3.5**

Summarise the basis for this Finding/Deficiencies Identified:

Orica New Zealand 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.

There are provisions for periodically reviewing and evaluating the Plan's adequacy and they are being implemented.

Section 13.1 notes that the TERP shall be updated:

- At least annually
- After any deficiencies are identified during exercises or incidents
- Whenever a significant change is made to the operations (e.g. change to key personnel, suppliers, equipment, products, routes etc.).

The ERG was undergoing a revision (Revision 2) at the time of the audit.

There are provisions for periodically conducting mock emergency drills and they are being implemented in some cases.

Section 12.3 (Exercises) of the TERP notes that regular exercises shall be conducted to ensure its effectiveness.

Three cyanide related exercises were undertaken during the audit period with two involving a scenario involved a truck with trailer breaking suddenly leading to the truck rolling onto its side whilst en route to the Gold Mine. The aim was to test the knowledge of personnel in their responsibilities and roles under the TERP.

The other scenario involved response to vehicle incident (tyre blow out) and the response actions during transport. Emergency response is also covered in the cyanide awareness training package provided to the drivers.

3.0 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.

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Report Signature Page

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APPENDIX A

Important Information

IMPORTANT INFORMATION RELATING TO THIS REPORT

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to its client ("Client") under and subject to a contract between Golder and its Client ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to its Client under the Contract.

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The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

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Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

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