REPORT

International Cyanide Management Code

Orica Australia Pty Ltd, Global Marine Supply Chain Amendment Summary Audit Report

Submitted to:

International Cyanide Management Institute
1400 I Street, NW – Suite 550
Washington, DC 20005
UNITED STATES OF AMERICA

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1.0 INTRODUCTION

1.1 Operational information

Name of Transportation Facility:	Orica Australia Pty Ltd – Global Marine Supply Chain
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2.0 CYANIDE TRANSPORTATION

2.1 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 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.

2.2 Yarwun Production Facility

Orica's Yarwun Facility, which is located 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 cyanide is packaged in either sparge isotainers, which have a maximum gross weight of 26 tonnes, or IBCs, which in turn, are packed into shipping containers – Twenty-foot equivalent units (TEUs). A maximum of 20 Intermediate Bulk Containers (IBCs) can be packed into a single TEU 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.

Orica's Yarwun Facility was re-certified as being in full compliance with the Code on 17 September 2020. Orica's Yarwun Facility is not part of the scope of this audit.

2.3 Orica Australia Supply Chain

The Australian Supply Chain covers the transportation of solution cyanide and solid cyanide from the manufacturing facility in Yarwun, Australia, by road and rail direct to its end point users within Australia, to the Ports of Brisbane, Gladstone, Alma and Melbourne and storage within the Toll Customised Solutions production facility.

Orica's Australian Supply Chain was re-certified as being in full compliance with the Code on 4 February 2022. The Australian Supply Chain is not part of the scope of this audit.

2.4 Global Marine Supply Chain

The Global Marine Supply Chain is a consolidation of all marine carriers and ports used by Orica to distribute their cyanide from Australia to their global customers. The Global Marine Supply Chain will form the marine link between the certified Australia Supply Chain (Section 2.3) and the certified supply chain or certified transporter relevant to the customer site.

2.4.1 Audit scope

The scope of Orica's Global Marine Supply Chain covers the following with the new carriers and ports highlighted:

Carriers:

- Australian National Line (ANL)
- Hamburg SUD
- Maersk
- Mediterranean Shipping Company (MSC)
- Navierra Ultranav Transmares (Transmares)
- U&D Ocean Shipping Co. Ltd.
- Ocean Network Express (ONE)
- Orient Overseas Container Line (OOCL)
- Pacific Asia Express (PIL/PAE)
- Swire
- Toll Shipping
- MLB Manfred.

Ports:

- Port of Abidjan, Côte d'Ivoire
- Port of Auckland, New Zealand
- Port of Brisbane, Australia
- Port of Buenaventura, Colombia
- Port of Buenos Aires, Argentina
- Port of Burnie, Australia
- Port of Busan, South Korea
- Port of Gladstone, Australia
- Port of Izmir, Turkey
- Port of Jakarta, Indonesia
- Port of Klang, Malaysia
- Port of Lae, PNG
- Port of Laem Chabang, Thailand
- Port of Melbourne, Australia
- Port of Mombasa, Kenya
- Port of Monrovia, Liberia
- Port of Nouakchott, Mauritania
- Port of Puerto Angamos, Chile
- Port of Puerto Deseado, Argentina
- Port of Callao, Peru
- Port of Cartagena, Colombia
- Port of Casablanca, Morocco.
- Port of Chalmers, New Zealand
- Port of Conakry, Guinea
- Port of Dakar, Senegal
- Port of Dar es Salaam, Tanzania
- Port of Puntas Arenas, Chile
- Port of Rockhampton, Australia
- Port of Santos, Brazil
- Port of Shanghai, China
- Port of Sudan, Sudan
- Port of Surabaya, Indonesia
- Port of Takoradi, Ghana
- Port of Tauranga, New Zealand
- Port of Tema, Ghana
- Port of Veracruz, Mexico
- Port of Walvis Bay, Namibia
- Port of Mersin, Turkey

- Port of Guaymas, Mexico
- Port of Lyttelton, New Zealand
- Port of Corinto, Nicaragua
- Port of Sihanoukville, Cambodia
- Port of Belawan, Indonesia
- Port of Lazaro Cardenas, Mexico
- Port of Subic Bay, Philippines
- Port of Port Moresby, PNG
- Port of Cape Town, South Africa
- Port of Durban, South Africa
- Port of Beria, Mozambique

2.4.2 Carriers

2.4.2.1 Australia National Line (ANL)

Headquartered in Melbourne Australia and with regional offices and agents around the globe, ANL provides an international cargo shipping service. ANL is part of the CMA CGM Group, the third largest container shipping line in the world. The Group operates on more than 200 shipping routes with over 504 vessels, calling at 420 ports in 160 countries, and employs 37,000 staff in 755 agencies and offices around the world. In 2019, ANL and the greater CMA CGM Group transported over 21.6 million Twenty-foot Equivalent Units (TEUs) and had an annual turnover of US$30 billion – ANL's contribution was approximately 1.5 million TEUs.

ANL has an extensive range of East-West services between Asia, the Mediterranean, Indian Subcontinent and Europe and North America. In addition, they also offer comprehensive coverage in the Asia-Pacific region, providing various services around Australia and between Australia and all parts of Asia, Papua New Guinea and New Zealand.

2.4.2.2 Hamburg SUD

Hamburg Süd was acquired by A.P. Moller – Maersk in December 2017. Hamburg Süd will remain a commercially independent company. Operating a fleet of over 177 ships, Hamburg employs 6,300 personnel around the globe. This consisted of dry container goods, general bulk, refrigerated cargo and dangerous goods.

Hamburg Süd examine dangerous goods transport enquiries on a case-by-case basis, to ensure compliance with statutory regulations. There are established and dedicated teams of qualified dangerous goods experts in the various business regions to assist and advise on the dangerous goods requirements. These experts are guided and monitored by a certified Dangerous Goods Safety Advisor (DGSA) and all safety and environmental requirements are met prior to transportation.

An integrated management system at Hamburg guarantees quality, environmental sustainability, and the safety of people, ships, and cargo. Since 1996, Hamburg has been certified under the ISO 9001 quality standard. The International Safety Management (ISM) Code for safe ship operation was also adopted in the same year. Hamburg expanded on these in 2000 when their environmental management system was certified under ISO 14001.

2.4.2.3 Maersk

Maersk, headquartered in Copenhagen, Denmark, operates a fleet of container vessels with worldwide shipping coverage. The fleet consists of approximately 700 vessels with the capacity to handle more than 49 million Twenty-foot Equivalent Units (TEUs) globally. Maersk operates a container booking and tracking system called the Global Customer Service System (GCSS). This system is the management tool for the proper stowage and handling of dangerous goods cargo.

Maersk require companies utilising their carrier services to provide evidence that their product packaging has been approved by government regulators and tested in accordance with International Maritime Organisation (IMO) Dangerous Goods (DG) Code. Maersk have the right to refuse cargo if the packaging, container and/or documentation are not satisfactory under the IMO DG Code standards.

As mentioned in the *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (April 2016), General Guidance notes, consigners are not able to conduct inspections and checks on shipping vessels due to port safety and security issues.

Maersk's vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories. Maersk also has current certificates for its vessels under the International Ship and Port Facility Security (ISPS) Code developed by the IMO.

2.4.2.4 MSC

MSC is a privately owned global organisation operating a network of over 480 offices in 155 countries, employing over 70,000 individuals.

Headquartered in Geneva, Switzerland, MSC is engaged in worldwide container transport. MSC operates approximately 550 container vessels with the capacity to handle the equivalent capacity of 45 million Twenty-foot Equivalent Units (TEUs) annually. MSC has global port coverage, operating on 200 different routes between 500 ports in 155 countries.

MSC delivers goods and services to local communities, customers, and international business partners via an integrated global network of road, rail and sea transport resources.

MSC has set up dangerous goods cargo management centres that manage the stowage of hazardous cargo worldwide through their MSC Link computer system headquartered in Antwerp. This hazardous cargo system is initiated when hazardous cargo is booked into the container booking MSC Link computer system. Specialist chemists are on-hand to ensure that chemical cargo is stowed and shipped in keeping with the necessary legal and safety requirements.

MSC's vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

2.4.2.5 Transmares

Headquartered in Santiago, Chile, Transmares provides transport services along the west coast of South America for containerised and break-bulk cargoes. Transmares operates a fleet of container and multipurpose vessels, in sizes ranging between 5,000 and 15,000 Dry Weight Tonnes (DWT), connecting ports along the west coast of South America.

Transmares' container vessels provide regular frequented feeder services to the main container liner companies, its vessels provide the region with specialised multipurpose services between the ports of Arica, Angamos, San Antonio, San Vicente, Chacabuco and Punta Arenas.

2.4.2.6 Ocean Network Express (ONE)

ONE was established on 7 July 2017 by the merging of three international shipping companies, these were K-Line Kawasaki Australia Pty Ltd (K-Line), Mitsui OSK Lines (MOL) and Nippon Yusen Kaisha (NYK Line). ONE's regional headquarters have been established in Hong Kong, Singapore, UK, USA and Brazil and services commenced in April 2018.

As a result of the integration, ONE's fleet size has a TEU capacity of 1.5 million (18 million annually), making ONE the sixth largest TEU carrier service in the world. Operations are conducted via a fleet of 224 vessels, including 31 large capacity ships capable of carrying up to 20,000 TEUs each. ONE's service network covers over 120 countries around the world.

2.4.2.7 OOCL

Orient Overseas Container Line and OOCL are the trade names for transportation services provided separately by Orient Overseas Container Line Limited (OOCLL) and OOCL (Europe) Limited respectively, both are subsidiaries of Orient Overseas (International) Limited, a public company listed on the Hong Kong Stock Exchange.

OOCL is one of the world's largest integrated international container transportation, logistics and terminal operator companies. As one of Hong Kong's most recognised global brands, OOCL provides customers with an integrated logistics and containerised transportation services, with a network that encompasses Asia, Europe, North America, and Australasia.

OOCL is one of the leading international carriers serving China, providing a full range of logistics and transportation services throughout the country. It is also an industry leader in the use of information technology and e-commerce to manage the entire cargo and supply chain process.

Dangerous Goods Coordinators are available to offer shippers all the regional advice that is required. A shipper's or customer's dangerous goods cargo is checked promptly and accurately. Legal requirements concerning all the countries and ports related to transport are taken into account. In addition, OOCL ensures safe transport by observing the relevant stowage and segregation requirements of dangerous goods based on international standards. The OOCL fleet includes 104 vessels with a combined capacity of 0.7 million TEU (8.4 million annually) as of December 2019.

2.4.2.8 PIL PAE

PAE is a subsidiary company of Pacific International Lines (PIL) and has represented PIL across Australia since 1990. PAE boasts national coverage around Australia with fully owned offices in all the Australian major ports as well as Darwin, Townsville, Launceston, and Mildura.

PIL PAE is a Singapore based, private company currently ranked 14th amongst the top container ship operators in the world, offering container liner and multi-purpose cargo services at over 500 locations, in 100 countries worldwide and employing over 18,000 personnel.

PIL PAE currently operate a fleet of over 190 container vessels and specialises in the global transportation of general container and reefer cargo, specialist transport equipment, break bulk and dangerous goods.

2.4.2.9 Swire

Swire is headquartered in Singapore, where, through three business divisions, Swire Shipping, Swire Bulk and Swire Projects, they own and operate over 150 carrier vessels. Swire offer multipurpose liner services for the transportation of containerised, breakbulk, heavy lift and project cargoes in addition to providing dry bulk and bulk logistics services globally. With over 2,500 onshore and seafaring staff globally, Swire trade in more than 90 countries and have offices in 18 countries. As the liner shipping division of The China Navigation Company (CNCo), Swire Shipping provides high frequency liner shipping services in the Asia Pacific markets and provides a wide range of customer solutions for project, heavy lift, refrigerated, breakbulk and mini bulk cargoes. 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.

With more than 145 years of experience, Swire Shipping connects up to 400 ports via a network of services in the Asia-Pacific region.

2.4.2.10 Toll

Headquartered in Melbourne, Australia and with regional offices and agents around the globe, Toll provides an international multimodal transportation service. Toll has a strong Asia Pacific focus though operates a network of sites throughout the world including Africa, the Middle East, Americas, and Europe. The Toll Group employs approximately 10,000 people at 600 freight, warehouse/logistics, aviation, marine and or support facilities throughout its global network.

Toll provides supply chain solutions and transport logistics for a range of industries and also work in partnership with niche service providers to offer specialised services such as metals logistics, aviation fuel logistics and dangerous goods management. With a fleet of approximately 13,000 units of varied size (containers, ships, vessels, and aeroplanes) operating across the Asia Pacific region alone, Toll is able to transport a variety of bulk product for customers in the mining, resources, construction, infrastructure and agricultural sectors.

The Toll Group have specialised vehicles and specialist trained personnel, enabling them to transport all nine classes of dangerous goods, complying with the regional, national, and international regulatory schemes applicable in the communities in which they operate.

Toll Shipping holds the following accreditations:

- ISO 9001:2008 Quality management systems
- International Safety Management (ISM)
- International Ship & Port Facility Security (ISPS)
- National Self Insurer OH&S
- Mass Management for Victoria and Tasmania, Australia.

2.4.2.11 U&D Ocean Shipping Co. Ltd

U&D Ocean Shipping Co. Ltd is a Hong Kong company and has been operating for approximately two-years. The Draco Faith vessel is owned and operated by U&D Ocean Shipping Co. Ltd (Marine Man Ship Management, 2021). The Draco Faith (IMO number 9574377, and Maritime Mobile Service Identity (MMSI) 355760000) has a carrying capacity of 9,023 t (dry weight) and up to 630 Twenty-foot Equivalent Units (TEU). The vessel was built by the Dongfeng Ship Industry, Chongqing, China (Balticshipping, 2022).

The Draco Faith is considered a generalised dry cargo carrying vessel, equipped to carry containers. The vessel was built in 2010. The Draco Faith sails under the flag of Panama with the classifications of CSA5/5, general dry cargo, ice class B-CSM, MCC. The dimensions of the vessel are 122 m long, and 19.8 m wide. The vessel has a total hold capacity of 13,350 CBM.

2.4.2.12 MLB Manfred

Founded in 1979, MLB Manfred operates a fleet of approximately 40 vessels. The fleet portfolio ranges from coasters and bulk carriers to container vessels, car carriers and a multi-purpose tween decker. Servicing traditional global sea routes, the full fleet is trackable and supervised constantly (MLB, n.d.).

The Langeoog, (bearing IMO number 9506136 and Maritime Mobile Service Identity (MMSI) number 305973000) is a general cargo carrier built in 2013 by Daoda Heavy Industry (Qidong, China). The Langeoog operates under the flag of Antigua and Barbuda and is owned by MLB Manfred. The overall length and width of the vessel is approximately 108 m by 17 m respectively. The carrying capacity of the Langeoog is 5,463 t (dry weight) (Marine Traffic, 2022).

- The vessel is a multi-purpose cargo carrier fitted with tween decks and grain bulkheads, there are two hydraulic single boom cranes (rated at 60 t and 45 t), and the total permissible load includes:
- Tanktop – 2,000 t/sq m
- Tween deck hatch – 250 t/sq m
- Weather deck hatch – 200 t/Sq m.

2.4.3 Ports

2.4.3.1 The Port of Abidjan

The port of Abidjan is located on the Côte d'Ivoire (Ivory Coast) in West Africa and is considered as one of the largest, most modern and equipped ports of West Africa. The port of Abidjan is located on the Ébrié Lagoon and is connected to the Gulf of Guinea and Atlantic Ocean by the Vridi Plage sandbar, a buoyed channel 2.8 km in length and 13.0 m deep. The port is the economical capital and main port of Côte d'Ivoire, with a central location and well-developed infrastructure, it is a major point for transhipments into West and Central Africa over the Côte d'Ivoire's network of rail and road systems. Since the opening of the Vridi Canal in 1950, the port of Abidjan has handled nearly all commercial trade for the Côte d'Ivoire.

The port of Abidjan has a total quay length of up to 6 km and there are 34 berths dedicated for general cargo, timber, cereals, fruits, petroleum products and containers. The port can accommodate vessels up to 260 m in length, depth at the harbor's mouth is 10.5 m, and the depth at the quay is 12.5 m. The port provides around 408,000 m^2 of open storage and 144 m^2 of covered warehouses and sheds. Three berths specialize in container-handling, and one berth is dedicated to roll-on/roll-off cargoes.

On 5 October 2020, Bolloré ports, APN Terminals and the Côte d'Ivoire government launched construction works on the Côte d'Ivoire Terminal, the second container terminal at the port of Abidjan. The Terminal construction work is scheduled for 18 months and will consist of surfacing and developing the reclaimed land and connecting the Abidjan railway network. This will be followed by the construction of the buildings and the acquisition of equipment. The new container terminal will provide up to 375,000 m^2 of additional storage and will be able to process over 1.5 million TEU containers a year. It will also allow ships with a draught of 16 m on 1,100 metres of wharves.

The port of Abidjan is certified with ISO 9001:2008 (quality), ISO 14001:2004 (environment) and OHSAS 18001:2007 (health and security).

2.4.3.2 The Port of Auckland

The port of Auckland, New Zealand is located next to Auckland's central business district. The port is configured into two main terminals, the Multi-Purpose Bledisloe Terminal and the Fergusson Container Terminal. Ports of Auckland Limited (POAL) manages the 17 berths and eight wharfs, with cargo-handling services provided by third-party stevedoring companies (POAL 2020a, internet site). A vital link in the inland transport and logistics chain, the port of Auckland offers four parallel rail lines – each 500 m long which can accommodate 128 rail wagons at a time for the loading and discharge of sea containers. The rail exchange connects the port of Auckland with inland freight hubs.

Auckland Harbour Control schedules commercial movements around the harbour to coordinate adequate resources for each movement. It has an advisory role for providing information to ships and other craft entering the harbour limits. The port uses the Transas Navi-Harbour system in conjunction with an Automated Identification System (AIS) to keep track of the movements of all ships as they travel between Cape Reinga and Tauranga.

2.4.3.3 The Port of Brisbane

The port of Brisbane is one of Australia's fastest growing multi-cargo ports handling over $50 billion annually of international freight; equivalent to over 15% of Queensland's Gross State Product. Located at the mouth of the Brisbane River, the port of Brisbane is managed and developed by Port of Brisbane Pty Ltd (PBPL) under a 99-year lease from the Queensland Government. PBPL is responsible for developing and maintaining port infrastructure and facilities, and for the provision of key services including maintaining navigable access to the port for commercial shipping, and the operation of the Brisbane Multimodal Terminal (BMT). The BMT is the interface between rail, road, and the container terminals at the port of Brisbane.

Between the port of Brisbane and its upriver facilities there are a total of 29 operating berths and more than 8,200 m of quayline. The port of Brisbane has nine dedicated container berths, which are leased and operated by three stevedores, namely; Patrick, DP World and Brisbane Container Terminals, all of which use automated container handling equipment. DP World Brisbane leases and operates Berths 4-7, Patrick leases and operates Berths 8-10 and Brisbane Container Terminals occupies Berth 11 and 12.

2.4.3.4 The Port of Buenaventura

The port of Buenaventura is the main port of Colombia in the Pacific Ocean, accounting for nearly 60% of all Colombian sea imports and exports. The nearest city to the port is Buenaventura, located approximately 5 km to the southeast.

The Sociedad portuaria Regional de Buenaventura S.A. (Regional port Society of Buenaventura; SPRB) is the port authority (port Authority) for the port of Buenaventura.

The port of Buenaventura has specialized infrastructure for container handling, grain, bulk and multipurpose cargo. It has 14 berths, 12 operated by Society of Buenaventura and 2 under another concession. The port is a multimodal transport port with an access channel length of 31.5 km (17 Nautical miles). The outside bay depth is 9.1 m at low tide (Zero Equal) and the inside bay depth is 12 m at low tide (equal zero). The cargo pier has a depth of 9.4-10 m. The port has a dock length of 2 km.

The port of Buenaventura has a specialised container terminal (Buenaventura SA – TECSA). Key handling equipment at the port includes two 50 million tonne (MT) and two 60 MT dockside cranes, six container gantries (40 to 62 MT) located on Post-Panamax shore rails, three multipurpose mobile cranes (100 and 104 MT), 16 reach stackers (40 and 30 MT), and 10 forklifts with different capacities for handling containers.

The container facilities at the port consists of a 40 m long quay, which allows for berthing of 2 large vessels simultaneously or a Panama Vessel, with a draft depth of approximately 14 m during minimal tide. The port's container facilities are equipped to attend up to 260,000 twenty-foot equivalent units (TEUs) per year. The container facilities at the port have approximately 19 hectares (ha) for container storage with a capacity to store up to 8,000 TEUs simultaneously.

Stevedoring operations at the port of Buenaventura are conducted by private companies and are classified and regulated by the national government.

2.4.3.5 The Port of Buenos Aires

The port of Buenos Aires is located in Puerto Nuevo (New port), Buenos Aires in Argentina. It is operated by the General ports Administration, a state enterprise, and it is the leading transhipment point for foreign trade in Argentina.

Terminales Río de la Plata (TRP) operates Terminals 1, 2 and 3 in Puerto Nuevo in Buenos Aires. The terminals have been remodelled to provide modern facilities and the latest in container-handling equipment and services. The two facilities make up the largest container terminal in the port, with capacity for handling one million 20-foot equivalent units (TEUs) of containerised cargo per year.

The port facility comprises three basins, providing up to five berths for vessel operations. The terminal handles deep-sea vessels from Europe, Asia, and North America, as well as feeders to both the East and West Coast of South America and barges upriver to Rosario.

TRP has an integrated management system which is certified against international standards for quality (ISO 9001:2008), environment (ISO 14001:2004) and security for the supply chain (ISO 28000:2007).

2.4.3.6 The Port of Burnie

The port of Burnie is located on the western shore of Emu Bay, Tasmania. Emu Bay is 3 km wide and 1.5 km deep facing in a northerly direction. The port services Tasmania's major West Coast mines and handles most types of bulk shipping requirements including, minerals, fuels, woodchips and logs, as well as containerised consumables and heavy-lift project cargo. There are four berths and several storage facilities available. A comprehensive fleet of mechanical equipment is available including container handling forklifts of up to 30 tonnes capacity and hazardous cargoes of most categories are handled as per Australian Standard 3846.

Owned and operated by the Tasmanian ports Corporation Pty Ltd (Tasports), the Port of Burnie is one of Tasmania's key deep-water ports and the State's largest general cargo port. Tasports is a registered, private company fully owned by the Tasmanian Government. Each year more than five million tonnes of general freight and more than 50% of Tasmania's containerised freight are transited through the port.

Marine and Safety Tasmania (MAST) and the Crown engage Tasports, under a Deed of Agreement, to perform specific functions within primary and secondary port areas under the *Marine and Safety Authority Act 1997*, Marine and Safety (Pilotage and Navigation) Regulations 2017 and *Pollution Waters by Oil and Noxious Substances Act 1987*, including provision of pilotage services, regulation enforcement in pilotage areas, maintenance of navigation aids, maintenance of a communications system, provision of emergency response, and provision of a response to marine based pollution.

2.4.3.7 The Port of Busan

The port of Busan is located at the mouth of the Naktong River in South Korea. It is the fifth busiest container port in the world and the largest transhipment port in north-east Asia. The port of Busan is subdivided into North port, Gamcheon port, New port, and Dadaepo port.

The Busan Port Authority (BPA) is responsible for developing, managing, and operating the port of Busan. The BPA's jurisdiction extends to Gamcheon port, which supplements the port of Busan, and New port on Gaduk Island.

The port of Busan is a vital gateway for Korea, connecting the country to the Pacific Ocean and Asia. It is Korea's main port, handling 40% of the country's overseas cargo and 80% of its container cargo. Approximately 130 international vessels enter the port daily.

Annual figures from 2019 show that the port of Busan handled in excess of 21.9 million Twenty-foot Equivalent Units (TEUs) in a 12-month period. This included 5.1 million TEUs of imports, 5.1 million TEUs of exports, and 11.6 million TEUs of transhipments.

There are four dedicated container terminals, these are Gamman, Shinsundae, Singamman, and Gamcheon. TEU capacities range from 340,000 to over 1,200,000 per year.

2.4.3.8 The Port of Callao

The port of Callao is Peru's main commercial seaport and located 12 km from the country's capital Lima. The port is governed by Peru's National port Authority, the Empresa Nacional De Puertos S.A. (ENAPU). The port is currently a point of entry for solid sodium cyanide chemicals into the Peruvian market place.

The port of Callao is protected by two artificial breakwaters. The northern breakwater is approximately 1,300 m in length and the southern breakwater is approximately 400 m in length. The opening between the two breakwaters is about 180 m in width. Pilots board vessels about one mile off the port entrance. The port has a good approach and navigation aids. There is a "traffic separation scheme" which is well marked on navigation charts. The access channel is well marked by sea buoys and lights on each breakwater.

Major international shipping companies such as Hamburg SUD, Maersk and MSC transport their shipments to the port of Callao. The port boasts world class standards for efficiency and productivity, averaging more than 30 gross moves per hour per crane, and ranked as the top container terminal facility in South America.

There are 16 berths for grains, general, bagged and liquid cargoes, lubricating and vegetable oils, mineral concentrates, containerised cargo, discharge of crude oil, clean products, propane gas, chemicals and water and passengers. There are seven open storage zones for the use of imported goods.

2.4.3.9 The Port of Cartagena

The port of Cartagena lies on the northern shores of Cartagena Bay on the northern Caribbean shores of Colombia in South America. The port is 640 km northwest of the country's capital, Bogota. The port of Cartagena is the second busiest port in Colombia, behind the Pacific-side port of Buenaventura, and the third busiest port in the Caribbean Sea. The port is strategically placed to capture sea traffic through the Panama Canal's transoceanic shipping lanes that connect the Atlantic and Pacific Ocean's sea traffic and other traffic around the Caribbean Sea.

The port of Cartagena contains two entrances, the Cartagena entrance is 250 m wide with a depth of 11.5 m, and the Escombreras entrance is 420 m wide with a depth of 25 m. The port has two water areas, Zones I and II. Zone I includes basins for commercial traffic, fishing, and other activities, covering over 225 hectares (218 hectares devoted to commercial traffic, 1.4 hectares for fishing, and 6.2 hectares for other activities). Zone II is a 4,778 hectare non-basin area of water surface for access, anchorage, and other activities.

The Sociedad portuaria Regional de Cartagena S.A. (SPRC; Regional port Society of Cartagena) is the port Authority for the port of Cartagena. The port is Colombia's main container port, operating 24/7, 365 days a year, and includes three open ports, and over 40 private ports. The port of Cartagena offers large scale maritime, cargo (container, refrigerated, automobile, loose and dangerous goods), logistic and cruise ship services. It is capable of handling 4 million TEUs per year, with plans to expand to 5.2 million twenty-foot equivalent units (TEUs) capacity. The port also provides mooring facilities for ships up to 16,000 TEUs.

The port of Cartagena is the City of Cartagena's principal container management port, incorporating two container terminals SPRC and Contecar. The Sociedad portuaria Regional de Cartagena (SPRC) terminal has an annual capacity of 2 million TEUs and handles ships up to 16,000 TEUs. It has a dock depth of 16.5 m, contains one 700 m longitudinal pier for ships up to 180,000 deadweight tonnes (DWT) and two jetties (186 m and 202 m) for feeder ships. As a strategic connection centre for shipping lines, the SPRC terminal can receive five Super Post Panamax ships simultaneously. The SPRC terminal utilises up to 9 ship-to-shore gantry cranes with a 22-container span and twinlift capacity for simultaneous unloading of two 20 ft containers, and two 100 t capacity mobile harbour cranes. The storage yard area is approximately 25 ha, with over 30,000 storage cells for containers, stacked up to 6 high.

The Contecar terminal has an annual capacity of approximately 3.2 million TEUs and also handles ships up to 16,000 TEUs. It has a dock depth of 16.5 m, contains one 1,000 m longitudinal pier. The Contecar terminal utilises 13 STS gantry cranes with a 22-container span and twinlift capacity for simultaneous unloading of two 20 ft containers. The storage yard area is approximately 70 hectares.

2.4.3.10 The Port of Casablanca

The port of Casablanca refers to the collective facilities and terminals that conduct maritime trade handling functions in Casablanca's harbours and which handle Casablanca's shipping. The port is located on Morocco's north-western shores, near Hassan II Mosque. The port is one of the largest artificial ports in Morocco and in the world. The port handles more than 21.3 million tonnes of traffic annually, which is 38% of Moroccan traffic, and carries out a sales turnover of more than 894 Million Moroccan Dirhams. With an extent of 605 hectares and extending to more than 8 km in length, the port can accommodate and treat more than 35 ships at the same time.

The port of Casablanca is managed by Marsa Maroc, the successor of the office D'Exploitation des ports (OPED), a publicly owned establishment that has the principal role of ensuring the management of passengers, goods and ships passing through Moroccan ports.

There are two container terminals at the port of Casablanca. The container terminal operated by Marsa Maroc includes Container Terminal (East) which has 600 m of quays at 12 meters deep, eight (8) gantry cranes, 3 km of railway, capacity of 700,000 TEUs/year and covers 60 hectares. The container terminal operated by Somaport has 700 m of quays at 9.2 m deep, three gantry cranes, 10 rubber tyre gantry cranes, capacity of 300,000 TEUs/year and covers 30 hectares.

The port of Casablanca has intermodal connections and is connected to Morocco's main cities by highway and railway.

The Harbourmaster's office monitors the transit of goods in the port and the appropriate location of ships. The Harbourmaster's mission is to enforce operating regulations in force for the manoeuvring of ships. Composed of three operational entities: programming stops, maritime traffic and safety/environment, the Harbourmaster's office has the human and material resources to carry out the tasks it is entrusted with. It is composed of three operational entities: programming stops, maritime traffic and safety/environment. The port has:

- A VTS control tower equipped with aids-to-navigation
- A CCTV system covering all the port's facilities and is equipped with an operational camera control centre
- The PORTNET IT system, a communication platform integrating all stakeholders of the port community.

2.4.3.11 The Port of Chalmers

The port of Chalmers is located inside the greater Otago Harbour region. Situated on the lower east coast of the South Island of New Zealand, port Otago operates two wharf systems – port of Chalmers and port of Dunedin – within the Otago Harbour. Port Otago Limited is the managing body.

The Otago Harbour is dredged to accommodate vessels with a maximum draught of 13.0 m from Taiaroa Head to port of Chalmers, where the container terminal is located. This enables the largest container ships in New Zealand trade to call at the port of Chalmers.

The port of Chalmers has three berths, suitable for handling containerised, multipurpose, and conventional vessels. Berthing flexibility is guaranteed by a swinging basin dredged to 13.5 m, with a turning diameter of 487 metres. Fairway to port Chalmers Basin declared at 13.5 m (at chart Datum). The port of Chalmers Container Facility covers 15 hectares of heavy-duty paved area with the capacity to store over 7,000 containers, over 38,000 m^2 of covered warehousing is also available.

2.4.3.12 The Port of Conakry

The port of Conakry is located on the south coast of Guinea and is the main port of Guinea. The port has a 20-hectare container yard and container storage capacity of 8,000 twenty-foot equivalent units (TEUs). The theoretical annual capacity of the port of Conakry is 600,000 TEUs. The container terminal is jointly operated by Bolloré ports and the port Authority of Conakry. The port operates a continuous loading and unloading service, and is linked to road and rail systems.

2.4.3.13 The Port of Dakar

The port of Dakar is located in the State of Colima, in the Republic of Senegal. Dakar is a deep sea port and is located at the intersection of the main sea routes serving the West African coast. The port is strategically placed, located at the most advanced point of the West African coast, and at the intersection of carrier lines linking Europe to South America, and North America to South Africa.

It is an international port of transit and serves as the gateway for Mali thus offering the possibility of additionally serving Niger and Burkina Faso.

The port is divided into two separate trading zones (North and South) separated by a military zone, ship repair shops and a fishing port. The container terminal in the North Zone of the port of Dakar covers an area of 24 ha. It has a linear quay of 700 metres in length with three berths ranging from 12 to 13 metres deep. Modern equipment is used for handling, including four docks (including two post-panamax), four Gottwald cranes on 100-tonne tyres, ten gantry cranes, 15 reach stackers and 400 refrigerator outlets.

The operator of the container terminal is DP World and they oversee the annual traffic of approximately 300,000 TEUs. The port also has separate terminals for bulk goods and hydrocarbons.

2.4.3.14 The Port of Dar es Salaam

The port of Dar es Salaam is located on the East Coast of Africa and is the principal port of Tanzania. Dar es Salaam handles approximately 95% of the Tanzania international trade and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

The port of Dar es Salaam has a rated capacity of 4.1 million (dwt) dry cargo and 6.0 million (dwt) bulk liquid cargo. The port has a total quay length of 2 km with eleven deep-water berths.

The Tanzania ports Authority (TPA) operates the port of Dar es Salaam, but all containerised cargo is handled by the Tanzania International Container Terminal Services Ltd (TICTS), which is located in the port of Dar es Salaam and is the largest container terminal in Tanzania. The terminal has four berths totalling 725 meters in length with a capacity to handle in excess of 500,000 TEUs per year which includes many classes of Dangerous Goods cargo.

2.4.3.15 The Port of Gladstone

The port of Gladstone is located approximately 525 km north of Brisbane in Queensland, Australia, and is the principal port in central Queensland. It is owned and managed by Gladstone Ports Corporation (GPC), which is a statutory corporate body of the Government of Queensland and is charged with overseeing the commercial activities in the port, including the maintenance of the port infrastructure and provisioning of pilots. The port of Gladstone is Queensland’s largest multi-commodity port, handling over 30 different products. Major cargoes include coal, bauxite, alumina, aluminium and cement. The port has a total throughput of more than 98 million tonnes per annum (Mtpa).

The port of Gladstone has eight main wharf centres, comprising 20 wharves:

- RG Tanna Coal Terminal – four wharves owned and operated by GPC
- Barney Point Terminal – one wharf owned and operated by GPC
- Auckland Point Terminal – four wharves owned by GPC and operated by others
- Fisherman’s Landing – four wharves operated by multiple companies
- South Trees – two wharves operated by Queensland Alumina Limited (QAL)
- Boyne Wharf – one wharf operated by Boyne Smelters Limited (BSL)
- Curtis Island – three wharves operated by Liquefied Natural Gas (LNG) companies; Australia Pacific LNG (APLNG), Santos GLNG and Queensland Curtis LNG (QCLNG)
- Wiggins Island Coal Terminal – one wharf operated by Wiggins Island Coal Export Terminal (WICET).

Out of the 20 wharves, the multi-user Auckland Point Terminal No. 4 is the only container wharf within the port of Gladstone. It has a berth pocket of 11.4 m (LAT), a berth pocket length of 220 m, wharf face of 220 m, wharf width of 33.9 m, wharf length (including mooring dolphins) of 269 m, bollard capacity of 100 tonnes (t), and a max vessel Dead Weight Tonnage (DWT) of 70,000 t. Container operations at Auckland port Terminal No. 4 are carried out by a large mobile container crane.

The Port of Gladstone limits ship size to 315 m length overall (LOA), beam 55 m and draft dependent on tide but not likely to exceed 18 m. Loaded ships may be draft restricted. The design depth of the Outer Harbour Channel is 16.1 m but may be less than this between scheduled dredging; a vessel can sail (weather conditions permitting) at 17 m draft on any day of the year and up to 18 m draft with the appropriate tide heights.

Port service providers are available 24 hrs per day, seven days per week.

2.4.3.16 The Port of Izmir

The port of Izmir lies on the south-east coast of Izmir Gulf in West Turkey, to the east of Aegean. It is the largest seaport in West Turkey. port of Izmir is about 505 nautical miles south of Bur Said, 569 nautical miles east of Mersin, and 509 nautical miles of Mesos, 198 nautical miles west of Peiraievs, and 276 nautical miles north of Istanbul.

The General Directorate of Turkish State Railways (TCDD) is the port authority for the port of Izmir. Izmir is the third largest city in Turkey and the port facility is connected with Turkey's rail and highway networks providing a key node for import and export for the country.

According to the Turkish Ministry of Transport's Maritime Bureau data, port of Izmir has set a record for 1.44 million Twenty-foot equivalent units (TEU) container throughput in 2017. The container terminal has seven berths which have an alongside depth of 13 m. The total length of the berths is 1050 m.

The terminal covers an area of 152,000 m^2, and the holding capacity is 7074 TEU. Container operations at the quays are carried out by five gantry cranes of 40 tonnes capacity. The operations at the container yard are carried out by 19 rubber-tyred transtainers and 21 reach stackers of 40 tonnes capacity, together with 28 containers forklifts of up to 42 tonnes capacity. Reefer facilities for refrigerated containers are also available. The berths and the yard behind are well equipped with modern handling facilities. There is one floating crane with 100 tonnes capacity, five container quayside gantry cranes of 40 tonnes capacity, nine shore cranes of 3-15 tonnes capacity, 14 mobile cranes of 5-25 tonnes capacity, 16 rubber-tyred transtainers of 40 tonnes capacity, 21 reach stackers of 40 tonnes capacity, 28 container forklifts of 10-42 tonnes capacity, 47 general cargo forklifts of 2-5 tonnes capacity, 36 tug masters, two loaders, and 62 trailers.

2.4.3.17 The Port of Jakarta

The Port of Jakarta (also known as Tanjung Priok) lies on the north-west coast of the island of Java at the mouth of the Ciliwung River, about 116 nautical miles east south-east of the port of Panjang on the island of Sumatra. The twelfth largest city in the world, the port of Jakarta is an important centre for education and industry.

The Port of Jakarta is the busiest port in Indonesia. It handles more than 30% of non-oil-and-gas cargo in the country, and around 50% of the entire flow of goods into and out of Indonesia. The comprehensive intermodal transport and modern technology facilities at the port allow it to connect to a network of cities in Indonesia.

The Port of Jakarta contains twenty terminals devoted to general, dry bulk, liquid bulk, and containerised cargoes. Specialised terminals handle oil, chemicals, scrap, and passengers. The Port of Jakarta has 81 berths with a total length over 12.8 km with alongside depths ranging from 3 to 14 m. The port of Jakarta also contains storage areas of 662,000 m^2 with capacity to store over 401,000 tonnes of cargo.

In 2007, over 17,800 vessels carried a total of almost 42 million tonnes of cargo and 3.7 million TEUs of containerised cargoes through the port of Jakarta. This total included 10.5 million tonnes of containerised goods in 3.7 million TEUs, 8.2 million tonnes of liquid bulk cargo, 7.9 million tonnes of general cargo, 8.2 million tonnes of dry bulk cargo, and 1.8 million tonnes of bag cargo.

Indonesia ports Corporation Tanjung Priok (IPC or PELINDO II) branch manages vessel traffic in port waters and basins, including anchoring and berthing of cargo ships.

2.4.3.18 The Port of Klang

The Port of Klang is Malaysia's principal port. It is located at the town, Port Klang, on the west coast of Peninsular Malaysia, about 40 km from the capital city, Kuala Lumpur. Port Klang is served by three major gateways called North port, South port (Southpoint) and Westport. There are 19 berths in North Port, eight in South Port and 31 in Westport. In addition, the Kapar Power Station operates two berths while Boustead Cruise Centre Terminal operates three berths.

PKA is a statutory corporation that administers the port and has five core functions:

- Trade facilitation
- port planning and development
- Regulatory oversight of privatised facilities and services
- Free Zone Authority
- Asset management.

The Port of Klang registered a growth of 10.7% year-on-year for January to November 2019 in container handling with a total of 12.32 million twenty-foot equivalent units (TEUs). The port has 34 container berths and sufficient equipment to support the movement of cargo with approximately 98 quay cranes, 269 rubber tyred gantry cranes, 15 straddle carriers, 713 prime movers, 704 trailers, and 14 reach stackers.

2.4.3.19 The Port of Lae

The Port of Lae is Papua New Guinea's (PNG's) largest and busiest port, located in the Morobe province of PNG, Lae is the second largest city and the capital of the province. The port handles bulk cargo, tankers and liquefied natural gas carries, RO-RO vessels and general container cargo. There are no wharf mounted gantry cranes, but forklifts are available and capable of lifting up to 20 tonne containers.

The port has five berths with a total length of 520 m, a total storage area of 53,620 m^2 for cargo marshalling, and maximum depth of 13.7 m. Port of Lae handles approximately half of the throughput of PNG's 22 declared ports, and more than 60% of the international and coastal trade registered in PNG Ports Corporation Limited (PNGPCL) ports, it generates more than 50% of PNGPCL's total revenue.

Lae serves as a gateway linking the world market with a large hinterland comprising Morobe province, the city of Lae (PNG's industrial and commercial centre), and five resource-rich provinces in the Highlands. PNG's most significant road, the Highlands Highway, runs from Lae to the Highlands region, dispensing imports ranging from heavy machinery to food products in the region and bringing the country's major export items to the port.

2.4.3.20 The Port of Laem Chabang

The port of Laem Chabang is situated on the eastern side of the Gulf of Thailand, south east of Bangkok and north of Pattaya, and covers an area of 2,572 hectares. Laem Chabang is Thailand's main deep sea port and currently handles over 1 million Twenty-foot Equivalent Units (TEUs) annually. The Port Authority of Thailand governs the activities and operations of the port of Laem Chabang.

Thailand's strategic geographical location and close proximity to neighbouring countries such as Myanmar, Laos, Cambodia and Malaysia enables Laem Chabang to act as a gateway port for South East Asia for international trade and goods import. Furthermore, Laem Chabang is well connected to its neighbouring hinterland via a sophisticated network of highways, railways and waterways.

The port of Laem Chabang consists of several minor ports that provide services including seven container terminals, one multipurpose terminal, one RO-RO terminal, one passengers and RO-RO terminal, one general cargo terminal, and one shipyard terminal. Laem Chabang port can also handle extra large ships (Super Post Panamax).

2.4.3.21 The Port of Melbourne

The Port of Melbourne is the leading international container terminal in Australasia. It handles around 36% of Australia's container trade, and over 2.88 million Twenty-foot equivalent units (TEUs) annually. Overall, the port of Melbourne owns and manages around 500 hectares of port land. The port precinct, with most of its related infrastructure extends west from the Bolte Bridge to the west bank of the Maribyrnong River and south of the West Gate Freeway (M1) around Webb Dock. It is primarily a container port though its multipurpose terminals handle a variety of non-containerised pack types. These include farm equipment and machinery, and breakbulk commodities like timber, paper, iron and steel.

The Port of Melbourne is operated by Victorian ports Corporation (Melbourne) (VPCM). As a government owned entity, VPCM's responsibilities include the management of commercial shipping in port Phillip, waterside emergency and marine pollution response, and the management of Station Pier as Victoria's premier cruise shipping facility.

2.4.3.22 The Port of Mombasa

The Port of Mombasa is managed by the Kenya Port Authority (KPA). Established in January 1978 under an Act of Parliament, the KPA is authorised to manage and operate the port of Mombasa and all scheduled seaports along Kenya's coastline. In addition, the Authority manages inland waterways as well as inland container depots at Embakasi, Eldoret and Kisumu.

The Port of Mombasa is the gateway to East and Central Africa, and is one of the busiest ports along the East African coastline. The port provides direct connectivity to over 80 ports worldwide and is well connected by road to a vast hinterland comprising Uganda, Rwanda, Burundi, Eastern Democratic Republic of Congo, Northern Kenya, Southern Sudan, Somalia and Ethiopia. A railway line also runs from the port into Uganda and Kenya.

The Port of Mombasa has two container terminals, the Mombasa Container Terminal and the Kipevu Container Terminal with a total annual capacity of approx. 1.65 million TEUs. Container operations at the port of Mombasa entail discharging and loading of vessels, stacking and unstacking of containers in the yard and delivery/receipt of import and export containers.

2.4.3.23 The Port of Monrovia

The Port of Monrovia (also referred to as the Freeport of Monrovia) is a landlord port that has concessions partnerships with APM Terminals, Firestone, China Union and Western Cluster. It is currently the largest port in Liberia. APM Terminal operate the main quay which has one container berth of 200 m length at 12.5 m deep. The port has one reach stacker and four forklifts. The main storage area in the Terminal is the yard for the containers which is around 10 hectares.

APM Terminals Liberia operates one dedicated berth for container operations, in addition to its one multi-use berth. Seven reachstackers, two empty handlers and two heavy duty forklifts for containers loading or collection of containers. There is a three-lane, automated in gate, and a separate three-lane out gate.

The Freeport of Monrovia is an International Ship and Port Security (ISPS) certified Security Level One port. The Terminal security has been enhanced in the last years. The security services are subcontracted by APMT and there is ongoing project to install CCCTV in the port to monitor all movements. APM Terminal ensures adequate lighting during the night which helps in increasing the security standards in the Terminal. To note that the APM Terminal uses its own generators for electricity and is not linked to the national grid.

Under current rules provided by APM Terminals transhipment or import IMDG Class 6.1 is authorised under restrictions including request prior to loading at port of departure and containers are to be transported outside of the port upon discharge.

2.4.3.24 The Port of Nouakchott

The Port of Nouakchott is the main port in Mauritania accounting for approximately 96 % of all annual port traffic. It is located near the West African Atlantic coast and was developed as the capital of Mauritania after it gained independence in 1960. In the past Mauritania lay on one of the most lucrative trade routes in West Africa.

Nouakchott port is an import port representing approximately 90 % of all annual imported goods, approximately 1.5 million tonnes, these goods include wheat, cement, clinker, flour, sugar, semolina, milk and general equipment. Exports include plaster from Samia, Mauritania’s main producer, animal skins and fish.

The Port of Nouakchott consists of two quays, one for small vessels (Wharf Quay) with draft less than 5 m and a second quay for larger vessels with a maximum draft of 10.3 m, this quay stretches 585 m and is split into four berths, three of which are used for cargo handling and the fourth for servicing vessels. The main cargo quay is located 4 km south of the Quai Wharf and 15 km south-west of the city of Nouakchott.

Nouakchott uses an integrated AS400 computer system developed in co-operation with the office d’Exploitation des Ports Marocains (ODEP). This offers management transparency and enhances the quality of service offered to international customers.

The Autonomous Port of Nouakchott, called PANPA for short, manages the port.

2.4.3.25 The Port of Angamos

Puerto Angamos is located in the heart of the mining region of Chile, in the commune of Mejillones approximately 1,400 km from Santiago and only 65 km from Antofagasta.

The Port is situated close to the most important copper district in the world, where there are several world-renown mining operations such as Chuquicamata, Escondida, Spence, Radomiro Tomic, El Abra and El Tesoro, among others. Angamos has fast access by train and truck connecting the main mining operations of Chile, Argentina and Bolivia, with the port without the need to cross through densely populated areas.

The Port has a multi-purpose, mono-operated terminal with four berths, maximum draft is 13.7 m and there is capacity to receive ships of up to 155 thousand tonnes of displacement and 366 m in length. Extensive storage capacity exists on site for containers, general/special cargo and bulk goods, as well as good interconnectivity options for transhipment via rail or road.

The Bay of Mejillones offers natural protection that provides exceptional conditions for most of the year against the tides coming from the south of the country. Meanwhile, its deep waters ensure availability to larger vessels and the ability to work safely.

Containers of dangerous goods discharged by vessels at the terminal are currently placed directly onto onward forms of ICMI accredited transportation and removed from the port area.

2.4.3.26 The Port of Deseado

Located on the southern Patagonia coast of Argentina, Puerto Deseado is the capital of the Santa Cruz province. Puerto Deseado is situated on the estuary at the mouth of the Deseado River and is a multi-purpose port facility handling fish, container and general cargo.

2.4.3.27 The Port of Puntas Arenas

The Port of Punta Arenas is located in Southern Chile, in the XII Region on the border of the Magellan Strait, in the basin of the Río de las Minas. The Port of Punta Arenas is operated by Empresa Portuaria Austral which is a Chilean Government Enterprise.

Port activity has declined, due in part to the opening of the Panama Canal, whilst more recently the greater autonomy of the new ships that operate in the region. Notwithstanding, new activities, such as offshore oil exploration, industrial fishing, scientific activities oriented towards the Antarctic continent and the attraction of Patagonian nature as a destination for tourist cruises have seen a resurgence in activity.

In Chile, port governance is influenced by a wide number of stakeholders – more than 30 organisations deal with the regulation of the port system. The main entities likely to generate or influence port policies include five ministries, these being: The Ministry of Transport and Telecommunication, The Ministry of Public Works, The Ministry of Defence, The Ministry of Finance and The Ministry of National Assets

2.4.3.28 The Port of Rockhampton

The Port of Rockhampton (formerly known as port of Alma) is located 61 km south east by road from Rockhampton, Queensland, on the southern end of the Fitzroy River delta. The port is managed by the Gladstone ports Corporation (GPC), a statutory Queensland Government-owned corporation who maintain the dredging, security, berths and operations at the port. The principal cargoes handled are class 1 explosives, ammonium nitrate, bulk tallow and military equipment for exercises held regularly at Shoalwater Bay to the north of Rockhampton (GPC 2020a). The port is a natural deep water harbour that accommodates vessels up to 180 m in length and has a total storage area of 140 ha.

The port has three berths, two for general cargo operations and one dolphin berth for the handling of bulk liquids (tallow and fuel cargoes). Suitable infrastructure is available for the handling of containers. In the 2018-19 financial year, the port of Rockhampton handled 222.2 kilotonnes of cargo, with 49 vessels passing through the port. Ammonium nitrate throughput accounted for 57.8 per cent of the total port tonnes in 2018-19. Other commodities included petroleum, explosives, tallow, salt container cargo and general cargo.

Shipping legislation in Queensland is controlled by Maritime Safety Queensland (MSQ), a state government agency attached to the Department of Transport and Main Roads. GPC is responsible for the management of dangerous goods in the port, including the loading and unloading of ships alongside and movement across the wharf. MSQ is responsible for monitoring and managing the safe movement of ships in Queensland waters.

2.4.3.29 The Port of Santos

The port of Santos is located in the city of Santos, state of São Paulo, Brazil. As of 2006, it has been the busiest container port in Latin America.

Companhia Docas do Estado de São Paulo (CODESP) is the Port Authority for Brazil's Sao Paulo state, where the Santos port is located. Deemed the largest port in Latin America, the complex handles a wide variety of cargo such as solid and liquid bulk, containers and general cargo. CODESP was founded in 1980.

2.4.3.30 The Port of Shanghai

The Port of Shanghai is situated in the middle of the Chinese coastline, where the Yangtse River flows into the sea. It is the meeting point in the T-shaped waterway network composed by the east-west Yangtse River and the north-south coastline and is also China's largest multi-purpose port and one of the country's most important gateways for foreign trade.

The port of Shanghai is composed of multiple port areas designated as follows:

- The shore of Huangpu River: such as Zhanghuabang, Jungong Road, Gongqing, and Longwu port areas etc.
- The south shore of Yangtze River: such as Baoshan, Luojing, and Waigaoqiao port areas etc.
- Hangzhou Bay: Yangshan port Area.

The container terminals are located at Yangshan, Waigaoqiao, and Wusong with a total of 46 berths. Yangshan, Waigaoqiao, and Wusong port areas are inter-connected via fast waterway and road transportation. Yangshan and Waigaoqiao are the primary terminals of the Shanghai port. The main cargos handled by the port include food, coal, timber, metal ore, petroleum and its products, steel, mining materials, machinery and equipment and bulk groceries.

Shanghai International Port (Group) Co Ltd (SIPG) is the primary operator of the port of Shanghai providing port-related services ranging from stevedoring and storage to ancillary and extended services such as logistics and financing.

The port of Shanghai also serves as a container transhipment hub for ports in the Yangtze River Delta, as well as in Japan and South Korea.

In addition to stevedoring services, the port of Shanghai provides assorted port services for containers, including short-term and specialised storage for non-standard goods, such as frozen perishables or hazardous substances.

China is a Category A member of the International Maritime Organisation (IMO) Council and a signatory to the Tokyo MoU, and as such performs its Port State obligations, supervises foreign ships in Chinese waters, and promotes compliance with international conventions among Flag States through Port State Control (PSC).

2.4.3.31 The Port of Sudan

The Port of Sudan is located at port Sudan on the east coast of Sudan on the Red Sea. The port of Sudan is the country's main seaport and has four terminals:

- North Quay has 12 Berths with total length of 1,866 m.
- Green Harbour Terminal that has 4 berths with a total length of 1,226 m, the Green Harbour is a multi-purpose terminal that can handle container cargo.
- Container Terminal (South Quay) has six berths with total length of 1,545 m and the berths 17 and 18 in the old container terminal are equipped with four ship to shore gantry cranes and 15 rubber-tired gantry cranes (RTGs), the new berths 13 and 14 are equipped with four ship to shore gantry cranes and eight RTGs.
- Alkhair Terminal for oil products.

The Container Terminal also has mobile quay cranes (2) and forklifts for (44) for handling full and empty containers. There is a dedicated 85,000 m^2 area for the storage of dangerous goods and unclaimed cargo. The container terminal was upgraded in 2011 and increased capacity by 700,000 TEU to 1.2 million TEU. The port has also established and inland container depot (ICD) at Salloum approximately. 18 km south west of the port and is located close to the main highway and railway.

The Sea Ports Corporation (SPC) is the port authority for the port of Sudan. The SPC is an independent Sudanese maritime body responsible for the building, development and maintenance of the country's ports, harbours and lighthouses.

2.4.3.32 The Port of Surabaya

The Port of Tanjung Perak Surabaya (TPS) in the Java province is the second largest port in Indonesia and the centre of cargo distribution for East Java and a gateway to Eastern Indonesia. The port is accessed from the North through the Madura strait, a 25 mile long, 100 m wide and 9.5 m deep channel between East Java and Madura Island.

The location of TPS is very strategic as it connects directly to the Surabaya toll way and the railway network into East Java and Eastern Indonesia.

The port has 6 main terminals, consisting of multi-purpose terminals for conventional cargo handling, a passenger terminal, RoRo and an international container terminal. Tugging, pilotage, bunker, storage and shipyard services are also provided.

The port of TPS is managed by the PT Pelabuhan Indonesia (Pelindo) III. Whilst the TPS container terminal is managed by DP World Surabaya. Other terminal services are provided by PT. Berlian Jasa Terminal Indonesia and PT Pelindo Marine Service provides pilotage, tug, towage and maintenance and logistics services.

2.4.3.33 The Port of Takoradi

The Port of Takoradi is located 230 kilometres east of Accra. Takoradi is strategically positioned to service the northern hinterland of Ghana and serve as an alternative port for economic operators in the landlocked countries of Burkina Faso, Niger and Mali. Historically, the port has handled up to 27% of Ghana's seaborne traffic, 68% of Ghana's seaborne exports and 15% of Ghana's seaborne imports. Major commodities handled through the port are manganese, bauxite, wheat, bulk and bagged cocoa, quicklime, containerised cargoes, equipment for the mining and oil/gas industry. Traffic through the port is facilitated by leading shipping lines and the port's wide range of equipment along with stevedoring services provided by the private sector enable it to offer a wide range of services.

Cyanide manufacturers and suppliers have the ability to ship product to the port from different parts of the world. The port allows for the unloading of shipments for final road transportation to the mining operations in Ghana as well as Burkina Faso and Eastern Mali.

The Ghana Ports and Harbour Authority (GPHA) oversees port operations.

2.4.3.34 The Port of Tauranga

The port of Tauranga (Tauranga) is located in the Bay of Plenty region, on New Zealand's North Island. It is operated by the company, Port of Tauranga Ltd and is New Zealand's largest freight gateway port. The world's largest shipping lines regularly call at the port of Tauranga, exporting a wide range of New Zealand products and importing products from all over the world.

The Tauranga Container Terminal has dedicated road and rail access, streamlining cargo movement into and out of the port, and is a key link in the MetroPort (land port) Auckland onward freight service. The Terminal operates a fleet of 36 straddle carriers linked by leading-edge information technology, ensuring the efficient movement of containers and allowing customers to track their cargo through every step in the process.

From 1 July 2020 to 30 September 2020, the port of Tauranga handled nearly 6.4 million tonnes of cargo, a 5% decrease on the same period last year, whilst containerised cargo decreased by 8% to 287,670 TEUs.

2.4.3.35 The Port of Tema

The port of Tema is the largest port in Ghana and located 30 km from Accra. The port handles about 12 million tonnes of cargo annually and receives over 1,650 vessel calls per year, including container vessels, general cargo vessels, tankers, Roll-on/Roll-off (Ro-Ro) and cruise vessels.

Tema port is the main container port servicing Ghana and its neighbouring landlocked countries. The port area includes a 1 million twenty-foot equivalent units (TEUs) container terminal, a fishing harbour, a shipyard with the largest dry dock in West Africa and a range of deep-water berths. Recent expansion projects, including a new dedicated 840 point reefer terminal and a 450 m long by 50 m wide bulk jetty, increased the port's berthing capacity from 14 to 16 berths.

Cyanide manufacturers and suppliers have the ability to ship product to the port from different parts of the world. The port allows for the unloading of shipments for final road transportation to the mining operations in Ghana as well as Burkina Faso and Eastern Mali.

The Ghana Ports and Harbour Authority (GPHA) oversees port operations.

2.4.3.36 The Port of Veracruz

The Port of Veracruz is located on the shores of the Gulf of Mexico in south-central Mexico, a little over 300 km east-southeast of Mexico City. The Port of Veracruz is the main seaport on Mexico's east coast and also serves as a communications hub for the State of Veracruz. Located about 240 km southeast of the port of Tuxpan and almost 400 km southeast of the port of Tampico, the port is the backbone of the city's economy.

The Port of Veracruz is Mexico's largest, and considered most vital port, it serves all of central and southern Mexico through a network of railways and roads. It also serves North, Central, and South America and Europe and Africa via its strategic geographic location.

2.4.3.37 The Port of Walvis Bay

The Namibian Port Authority (NAMPORT) was formed on 28 February 1994, when Walvis Bay was reintegrated into Namibia and the Namibian Ports Authority Act was passed. The Act placed the port of Walvis Bay's assets, management and staff back under Namibia's jurisdiction. Since then, NAMPORT, under the auspices of the Ministry of Works and Transport, has been tasked with managing, operating and developing Namibia's ports.

The port of Walvis Bay is situated on the west coast of Africa and strategically placed to provide a transit route between southern Africa, Europe, Asia and the Americas. Namibia continues to attract foreign direct investment, and its ports form a natural gateway for international trade. Walvis Bay offers direct access to principal shipping routes, and Namibia's connecting transport corridors enable the country to compete as a transport hub for regional and international trade between the Southern African Development Community (SADC) countries, Europe, Asia, the Americas, and the rest of the world.

Entrance to the port consists of a 5.2 Nautical Mile (NM) long channel that is 134 m wide and 14 m deep. On average, between 2,000 and 2,250 vessels visit the port of Walvis Bay every year, of which container vessels account for the largest number of visits. The existing container terminal has 350,000 Twenty-foot Equivalent Unit (TEU) throughput capacity per annum. A new container terminal will soon increase that to 750,000 TEUs per annum. Considered a congestion-free port with minimum delays, the port of Walvis Bay currently handles 7 million tonnes of cargo per annum and is suitably equipped to increase that total to 8-10 million tonnes. The New Container Terminal project will provide increased container handling capacity as well as increase the port's bulk and break-bulk handling capacity by freeing up the existing container terminal to become a multi-purpose terminal.

The Port of Walvis Bay handles container imports, exports and transhipments, as well as bulk and break-bulk of various commodities. NAMPORT serves a wide range of industries such as the petroleum, salt, mining, and fishing industries. Both bulk and bagged salt are also exported from the port of Walvis Bay.

2.4.3.38 Port of Mersin, Turkey

The Port of Mersin is one of the main container ports servicing Turkey. The General Directorate of Turkish State Railways (TCDD) is the port authority for the Port of Mersin. Mersin's port is Turkey's largest container port and the port facility is connected to Turkey's rail and highway networks, providing a key node for import and export for the country.

Access to the harbour from the Aegean Sea is through Izmir Inlet where depths range from 25 to 40 fathoms. Depths vary by 6 to 8 ft at Pelikan Bank; 6 to 12 ft in the vicinity of Yenikale; and 12 to 18 ft inside the middle harbour anchorage area.

The port area covers 124 hectares with total berth length of 3,370 m. The following points highlight some of the key features of the port of Mersin (Mersin International Port, 2021):

- The port has 21 total berths with depth of 15.8 m
- 2,600,000 TEUs per year of container handling capacity
- 1,000,000 t per year of general cargo handling capacity
- 12 gantry cranes and 5 mobile cranes to support operations
- The port provides 24/7 pilotage, towage, and mooring services.

The Port of Mersin has a continuous security and operational monitoring system, the overall running of which is controlled via a centralised Terminal Operating System (TOS). There are CCTV cameras at numerous points within the port, and entry/exit is controlled through biometric identification cards. Entry and exit are limited to authorised personnel only (Mersin International Port, 2021).

2.4.3.39 Port of Lazaro Cardenas, Mexico

The Port of Lazaro Cardenas is located within the Mexican State of Michoacán. The port is owned and operated by the Mexican government and is one of its largest seaports. It is the deepest port in Mexico with a navigation area up to 19 m (62ft) deep, and 38 shipping lines to accommodate varied cargo at a capacity of 2.2 million TEU per annum.

The port is strategically located having direct access to a highway, rail connection and fifteen intermodal terminals. There is daily departure of two railways within Mexico and the United States with a capacity of up to 240 containers.

2.4.3.40 Port of Guaymas

The Port of Guaymas, is located on the Gulf of California in the southwestern area of the State of Sonora, Mexico. The Administración Portuaria Integral (API) de Guaymas, S.A. de C. V. is the port authority for the Port of Guaymas. The Port of Guaymas has a diverse infrastructure that allows the safe navigation of large vessels with an access channel, docking and 6 berthing positions. The berths are separated into two bands: the south band with 360 m and the east band with 900 m. The berthing positions are frequently maintained and dredged to keep them in optimal conditions.

The Port of Guaymas handled 7.3 million metric tons of cargo in 2019. Cargo predominantly included containers, mineral bulk, agricultural bulk, general cargo, and fluids. Containerized cargo includes; general cargo, machinery, furniture, computers, electrical parts, medical equipment and perishable products. Mineral bulk cargo includes; copper concentrate, cement, magnetite, gypsum, barite, fertilizer, and molybdenum. Agricultural bulk cargo includes; wheat, soy, corn, safflower, sugar, vegetables, and livestock. General cargo includes wood and steel products, rods, pipes, and Ro-Ro cargo. Liquid cargo includes; petroleum, diesel, sulfuric acid, ammonia and fish oil.

2.4.3.41 Port of Lyttelton, New Zealand

The Port of Lyttelton is located on the southern island of New Zealand, outside the township of Lyttelton and approximately five nautical miles from the ocean. The entrance to the inner harbour is approximately 150 m wide and provides a sheltered, deep-water port for container, bulk, and conventional vessels.

Cargo includes; fertiliser, gypsum, cement, imported vehicles, aviation fuel, diesel and other petroleum products. The port is also New Zealand largest coal handling facility. In total, over 500,000 TEUs of container cargo were loaded and unloaded in FY22.

2.4.3.42 Port of Corinto, Nicaragua

The Port of Corinto is located in the province of Chinandega, on the western coast of Nicaragua, in the province of Chinandega, and is largest port in Nicaragua. The port is governed by the Empresa Portuaria Nacional (EPN). EPN has responsibility for six Nicaraguan ocean ports and seven lake ports. It is the country's main commercial port and is connected by highway to mainland Nicaragua year-round. The port has three terminals namely; Terminal de Carga General, Terminal de Contenedores and Terminal Carga Liquida, with a combined outdoor storage area of 50,700 m². The exterior channel is 14.6 m deep, 150 m wide, and 3.4 km long while the inner channel is 13.35 m deep, 115 m wide, and 3.14 km long.

The Port has a marginal concrete pier of 610 m long with a terminal and outer harbor which includes a warehouse for the storage of goods. The port is also known as Puerto Corinto and is the biggest and most important port in the country with an natural protected harbour.

2.4.3.43 Port of Sihanoukville, Cambodia

The Port of Sihanoukville is located in the Preah Sihanouk province in the southwest of Cambodia and is the country's only deep-sea international port. The port has 8 berths and a tanker terminal naturally protected from winds through islands and a constructed breakwater. There is a container terminal with a combined 155,000 m^2 capacity and general cargo terminal with a combined 81,000 m2 capacity. The ports container throughput is approximately above 540,000 TEUs, with access to end users through major roads and the southern railway line.

To safeguard and improve vessel management, the installation of Vessel Traffic Management System (VTMS), navigational buoys and maintenance of vessel channels has been carried out. A Container Terminal Management System which includes, storage and vessel planning, have been implemented (PAS, 2019). Available safety and security features include equipment such as X-ray and Gamma-ray container scanners, CCTV cameras, emergency response capabilities (fire and medical) and security patrols.

2.4.3.44 Port of Belawan, Indonesia

The Port of Belawan is located on the estuary of the Deli and Belawan river in the province of North Sumatera and Medan, Indonesia. It is located approximately 12 km from the centre of Medan, the capital of the North Sumatra province. Built in 1890 the port was used to export tobacco and with the creation of addition in 1907 the Port of Belawan started to be used for foreign goods shipping. The cargoes expanded during the early 20th Centuary where it began to export palm oil and rubber (World Port Source, 2022). The Port is one of the largest in Indonesia and is the main gateway for import and export of industrial products. The Port is able to handle all types of containers and cargo (like RoRo, bulk and break-bulk cargo). The Port is under the administration of *PT. Pelindo (Persoro) Reginal* I Northern Sumatera (LCA, n.d).

The Port of Belawan's bulk handling capabilities include three terminal facilities dedicated to fertilizer, cement, and copra residue. Each terminal has lengths of 100 m and handling capacity of 500,000 to 985,000 tons/year. The port has 25 warehouses which cover a total area of 61,474 m2. The port also includes 23 storage yards covering a total area of 64,386.96 m sq. and 7 container yards with a total area of 262,490 m sq. (LCA, n.d). Some of the port services include:

- Pilotage, towing, cargo and goods, warehousing, open storage, operation and rental of handling equipment

- Stevedoring services in delivering of the cargo to the designated location

2.4.3.45 Port of Subic Bay, Philippines

The Port of Subic Bay is located about 82 km northwest of Manila on the eastern shores of the bay of China Sea in south-west Luzon in the Philippines. The port is operated by Subic Bay Metropolitan Authority (SBMA), who also acts as port authority for the Port of Subic Bay. Access to the Port is made through a 644 m wide channel with depth of 40 m and the facility accommodates dry cargo vessel up to 151.5 thousand deadweight tons (DWT) with maximum length of 520 m, beam of 43 m, and draft of 13 m. The port has five anchorage areas (depths range from 27 to 44 m). The port requires pilotage for vessels above 500 Gross Registered Tons (GRT) and all vessels require port authority clearance at least 24 hours before entering the port (World Port Source, 2022).

- Three berths are located in the Port of Subic Bay's Subic Shipyard:
- C-Quay which is 300 m long
- E-1 Quay which is 255 m long
- E-2 Quay which is 205 m long.

The Sattler Pier and Marine Terminal Pier are 180 m and 255 m long respectively with alongside depth of 12 m for both. The surface area for Sattler Pier is approximately 4,400 sq. m and Marine Terminal Pier 15,700 sq. m. Both the Piers combined can handle over 139,000 TEUs per year and has 70,600 sq. m of covered storage area and 164,000 sq m of open storage yard (World Port Source, 2022).

At the port of Subic Bay, the main port handling equipment consists of:

- Dockside crane
- Container gantries
- Mobile cranes
- Reach stacker
- Grain elevator with bagging machines
- Transtainer
- Forklifts.

The port is compliant with ISPS and deployment of local security services within the port premises is managed by SBMA (LCA, n.d).

2.4.3.46 Port of Moresby, PGN

The port of Port Moresby is located approximately 300 km south of the Port of Lae on the southern shores of the main island of Papua New Guinea in the province of the National Capital. With the government of PNG as the sole shareholder, the PNG Ports Corporation Limited is the port authority for the port and all other port facilities within Papua New Guinea. The PNG Ports Corporation Limited is responsible for managing and controlling the ports whereas the regulatory functions are carried out by the Department of Transport, PNG (World Port Source, 2022).

The following are some of the main features of Port Moresby (Logistic Capacity Assessment, n.d):

- Port Moresby wharves include berth space of approx. 545 m with alongside depths from 3 to 7.5 m.
- The two main wharf berths, 1 and 2 are 106 m and 107 m long with alongside depth of 7.5 m.
- Berth 3A and 3B are 67 m and 113 m long with alongside depths of 3.8 m and 4.5 m respectively. This constitutes the Costal Wharf.
- The container berth 4A is 125 m long with depth of 10.6 m alongside.
- The port also contains two barge ramps of 6 m and 9 m in width.
- The storage area of the port at Port Moresby is around 11,700 sq. m with additional open storage of 6,400 sq. m.
- Three sheds at Port Moresby's Main Wharf cover a total area of 4,700 sq. m.
- Coastal shed covers 650 sq. m.
- Port handling equipment includes cranes, a tug master, tractor and forklift operations.

The Port of Port Moresby is ISPS compliant with current ISPS level as 1.

2.4.3.47 Port of Cape Town, South Africa

The port of Cape Town is located on the shore of Table Bay at the north end of Cape Peninsula, approximately 108 km from the Port of Saldanha in South Africa. As a main seaport, the port of Cape Town contributes to the Western Cape's economy. The Port is located in one of the world's busiest trade routes and contains two major docks. The Ben Schoeman Dock provides home to the container terminal while the Duncan Dock includes multi-purpose terminals, dry docks, a repair quay, and a tanker basin. The Port operates 24 hours a day throughout the year. The Duncan Dock entrance is 180 metres wide and approximately 15 metres deep and entrance to Ben Schoeman Dock is 14 metres deep.

There are 34 berths with ship repair facilities. The container terminal at the Ben Schoeman Dock is equipped with a fleet of post-Panamax gantry cranes. Transnet National Ports Authority (TNPA) manages and controls the Port of Cape Town (World Port Source, 2022).

The Port of Cape Town is the Western Cape region's premier port with an area of 253 ha and water area of 9,163 ha (TNPA, n.d). Due to the strong winds during the Cape winter (April to September), there is a possibility of disrupting cargo and ship work. Four tug vessels provide support services and navigation is subject to a Vessel Tracking System (Ports and Ships, n.d). South Africa is a state member of International Maritime Organization since 1995 (IMO, 2019).

2.4.3.48 Port of Durban, South Africa

The port of Durban is located on the east coast of South Africa, and around 165 km southwest of the Port of Richard Bay. Occupying an area of approximately 1,850 ha, the port operates 24 hours a day throughout the year. The entrance channel to the port is 122 metres wide maintained at 12.8 metres depth of water. The port of Durban operates under the following limitations:

- Ships are restricted during the daylight to 243.8 m length with width of 35 m and a draught of 11.9 m or 12.2 m depending on the tide and harbour master's clearance
- Night restrictions apply for ships with lengths of over 200 m, a beam of 26 m, and a draught limit of 11.6 m

- Necessary consultation is required with the harbour master for permission to enter port
- Pilotage is compulsory for all large vessels with a helicopter and pilot boats supporting the transfer of pilots
- All the shipping movement inside the port is subject to a VTS controlled by Millennium Tower on the Bluff.

The port facilities consist of five business units managed by Transnet Port Terminals (TPT) and operates on a common user basis. The Durban Container Terminal (DCT) is one of the business units managed by TPT and one of the busiest and largest of its kind at the port. The DCT has 2,128 m of quayside which is further divided into seven berths (Freight Transport Data Bank, n.d).

The port consists of extensive ship repair facilities of two compartments with total length of 352 m and width 33.5 m. Five electric cranes from 10 tons to 50 tons capacity are used (Ports & Ships, n.d). The Port of Durban has 59 berths and vessels up to 300 m long and 37 m wide can enter the port without any hinderance. Transnet National Ports Authority acts as Port Authority. The repair facilities consist of (World Port Source, 2022):

- A graving dock with berthing distance of 79 m with depth of 11.3 m
- A repair quay with berthing distance 79 m and 6.1 m depth
- A ship repair jetty with berthing distance 413 m with 8.5 m depth
- A department repair jetty with berthing distance of 152 m with 4.8 m.
- South Africa is a state member of International Maritime Organization since 1995 (IMO, 2019).

2.4.3.49 Port of Beira, Mozambique

The port of Beira lies on the northern shores of the Mozambique Channel of the Indian Ocean and is the second largest port in Mozambique. The port is in the Sofala Province at the mouth of the Pungoe River and approximately 319 km from the Zimbabwe border. The port is accessed via the Macuti Channel (11 m depth) which remains open throughout day and night (24 hours). Night-time limitations on navigation exists since the River constantly changes banks and shoals. Vessels entering must anchor at the bar to seek support before entering the port. The port contains a 1,994 metre wharf which has 11 berths. The port of Beira has the following features (World Port Source, 2022):

- Container and multi-purpose terminals have 645 m long berths with depths of 12 m and are supported by 36 m gantry cranes
- The terminal provides two covered sheds (11,000 sq. m) with the capacity of 100,000 TEUs of containerised cargo per year
- The port also provides a 200,000 sq metre container yard with 144 reefer points and can accommodate 3,117 TEUs and IMDG dangerous goods cargoes
- Port facilities also include an 8,400 sq metre fully secured transit warehouse with 3,700 sq metres of covered storage area
- The port's general cargo terminal has the capacity to handle 2.3 million metric tons of cargo in a year and has a 670-metre wharf with four berthing positions with 10 metres depth each

- The general cargo storage area consists of five warehouses covering 15,000 sq metre and 12,000 sq metre open paved area, and additional 175,000 sq metres of storage area
- The port also has dry dock for vessels up to 110 metres long and provides ferry services carrying passengers.

The port of Beira operates under the management and authority of Portos e Caminhos de Ferro de Mocambique, E.P. Mozambique is a state member of International Maritime Organization (IMO) since 1979 (IMO, 2019) and International Convention for the Safety of Life at Sea (SOLAS) signatory nation since 1990.

2.5 Trans-shipping and interim storage

Depending on weather, cargo types, journey length, and other operational matters, carriers may trans-ship 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 within Orica's Supply Chain. Orica has no control over when and where this happens, but through its due diligence assessments has satisfied itself that the carriers used (ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred) undertake the shipping of the product in accordance with the IMO DG Code and in a professional and safe manner.

This satisfaction extends to the selection of port terminals made by the shipping companies and used for trans-shipping and interim storage purposes.

2.6 Auditor's Findings and Attestation

	☒ **in full compliance with**	
Orica is:	☐ in substantial compliance with	**The International Cyanide Management Code**
	☐ not in compliance with	

No significant cyanide exposures or releases were noted to have occurred during Orica's Global Marine Supply Chain certification audit.

Audit Company: Golder Associates Pty Ltd

Audit Team Leader: Edward Clerk

Email: ed.clerk@wsp.com

2.7 Name and Signatures of Other Auditors

Name	Position	Signature	Date
Edward Clerk	Lead Auditor and Transport Technical Specialist	E. Clerk	11 April 2023

2.8 Dates of Audit

The Supply Chain was last certified against the International Cyanide Management Code (ICMC or the Code) on 16 January 2021. With the addition of 12 new ports and 2 new carriers to the Supply Chain, WSP was engaged by Orica to complete the recertification of Supply Chain with the new Ports and Carriers amendments on October 2022. 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 *Cyanide Transportation Verification Protocol for the International Cyanide Management Code* and using standard and accepted practices for health, safety and environmental audits.

Orica Global Marine Supply Chain		11 April 2023
Name of Facility	Signature of Lead Auditor	Date

3.0 CONSIGNOR SUMMARY

3.1 Principle 1 – Transport

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

3.1.1 Transport Practice 1.1

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

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 1.1**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

The Orica 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 has implemented a process for selecting transport routes that minimises the potential for accidents and releases or the potential impacts of accidents and releases.

Orica has developed and implemented a management system for transportation and there are specific written procedures that detail the process and the parameters to be assessed when identifying, selecting and assessing potential transport routes. These procedures aim to minimise the risk associated with the transportation of cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points throughout Australia and the world.

Orica undertakes due diligence assessments on carriers, ports and service providers at regular intervals to ensure that standards are being maintained. Due diligence assessments are completed as a part of the initial route selection process; as well as on a triennial basis, as a means for Orica to ensure dangerous goods product transportation is being carried out in accordance with the required standards. The due diligence assessments state that:

The report is not a final acceptance of [the shipping lines] OR [the Port] *for future work and as with all service providers to Orica, Orica will continue to review and monitor the performance on a triennial basis.*

Orica has requirements for the selection and management of contractors for the transport and storage of their cyanide. Procedures cover all transport and storage providers and ensure that contractors working for and on behalf of Orica are aligned with the company's Safety, Health and Environmental standards.

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 origin to the destination.

With regards to carriers, Orica has implemented a carrier assessment procedure. The purpose of this procedure is to assess carriers and their contractors at regular intervals against company standards and requirements. Carriers are assessed using the Orica Carrier Assessment Questionnaire 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.

Orica utilises ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire,Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred for the international shipping of cyanide. Containers are placed and secured on vessels at the port of loading by the stevedoring company or service provider and removed at the destination by the stevedoring company or service provider at that port. As such, ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire,Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred provide a marine carrier service and handling of containers (on and off vessels) is undertaken by stevedoring companies at each port.

Orica does not have control of over routes taken by the service providers, but has undertaken due diligence assessments of ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire,Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred to verify that the shipments are transported in accordance with regulatory requirements.

The international sales and exports of cyanide by Orica take into consideration the ports and their extended infrastructure available to service the intended target area. The destination port is selected on the basis that it is the closest port to the customer and that it appears to meet reasonable industry standards for safety, security and emergency response.

Due diligence assessments of the ports used in the Supply Chain concluded that the ports meet the requirements of the ICMC. The due diligence assessments state that:

Where issues were identified, it was established that they would be adequately mitigated by Orica reducing the time that product spends at that port.

Risks are identified during the route selection process. Orica has implemented procedures to evaluate; and periodically re-evaluate, the risks of selected cyanide transport routes and take the measures necessary to manage these risks.

Orica documents the measures taken to address risks identified with the selected routes. The measures taken to address risks are documented within the Route and Carrier Assessments, and the due diligence assessments for carriers and ports.

Orica has assessed its routes for special safety or security concerns. The due diligence assessments did not identify the requirement for additional safety and security measures.

3.1.2 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**	
Orica is	☐ in substantial compliance with	**Transport Practice 1.2**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Orica is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide handling and transport equipment to perform their jobs with minimum risk to communities and the environment.

Orica does not directly operate transport vehicles in its Supply Chain.

Orica utilises ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred for the international shipping of cyanide. Containers are placed and secured on their vessels at the port of loading by the stevedoring company or service provider and removed at the destination by the stevedoring company or service provider at that port. As such, ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred provide a marine carrier service and all actual handling of containers (on and off vessels) is predominately undertaken by stevedoring companies at each port.

The assessment of transporters is undertaken via the Carrier Assessment Questionnaire (Carrier Assessment). This assessment is detailed and requires that carriers 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.

Due diligence assessments of ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred were undertaken to verify that the shipments are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the management and shipping of cyanide product by any of the carriers.

Orica conducts triennial due diligence assessments; and biennial carrier assessments, of carriers used in the Supply Chain.

Orica does not operate transport vehicles or equipment at port facilities used in its Supply Chain, operation is undertaken by the managing port authority or stevedoring service provider at the port.

The due diligence assessments found that the ports used by Orica are performing dangerous goods handling duties in accordance with international and local regulations. Ports selected in the Supply Chain are in IMO member countries, member nations must ensure that ports comply with the requirements of the IMO DG Code 2018, and in particular the training requirements for shore-side personnel as described in section 1.3.1.

Orica conducts triennial due diligence assessments of port facilities used in the Supply Chain.

3.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 1.3**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica does not directly operate transport vehicles in its Supply Chain.

Carriers and ports used by Orica have equipment operation and maintenance capabilities and procedures that are not dependent on Orica. The ability of the carriers and port facilities to operate safely, and their capability to handle dangerous goods is assessed during the Carrier Assessment and due diligence process.

Orica conducts triennial due diligence assessments for carriers and ports; and biennial carrier assessments, for service providers used in the Supply Chain.

The completed due diligence assessments found that there were no issues of concern with regards to the management and shipping of cyanide product by any of the carriers; and that the ports used by Orica are performing dangerous goods handling duties in accordance with Orica's requirements and relevant regulations.

Orica utilises select ports and carriers along its Supply Chain and has undertaken due diligence assessments to verify that the shipments are managed in accordance with Orica's and the ICMC's requirements.

3.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 1.4**
	☐ not in compliance with	

Summarise the basis for the Finding/Deficiencies Identified:

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

There are procedures in place to ensure that cyanide is transported in a manner that maintains the integrity of the producer's packaging.

Product packaging is undertaken at the ICMC-certified Yarwun Facility and cyanide is packaged and transported in accordance with international regulatory standards, thereby meeting the requirements of the political jurisdictions through which the loads will pass.

There are in-transit procedures that allow for checks of the packaging integrity and the reporting of any damage or spillage. There are single use seals placed on doors of shipping containers and checks are tracked and recorded alongside a package's unique serial number.

ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred require from Orica, evidence that products booked for transport meet the packaging requirements of the IMO DG Code. Some carriers reserve the right to refuse acceptance of cargo that does not meet packaging, container and documentation standards as set out in the Code.

Due diligence assessments of ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred were undertaken to verify that shipments of dangerous goods are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the shipping of cyanide product by ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred. Cyanide product remains sealed and packaged within locked shipping containers until it reaches the end use destination.

Orica conducts biennial carrier assessments; and triennial due diligence assessments of carriers and port facilities used in the Supply Chain.

Orica has a process to ensure that placards or other signage are used to identify the shipment as cyanide, as required by local regulations or international standards.

Placards and signage used to identify the shipment as cyanide meet local and international standards. Diamonds placed at the front and rear of the vehicles identify the load as cyanide and the containers also have labelling that identifies the contents. Orica packaged cyanide remains sealed within its initial packaging and container until its arrival at the destination.

3.1.5 Transport Practice 1.5

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

Orica is	☒ **in full compliance with**	**Transport Practice 1.5**
	☐ in substantial compliance with	
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Shipments of cyanide transported by sea are transported in compliance with the IMO DG Code.

All containers (i.e. freight containers of IBCs and sparge isotainers) are packaged and placarded at the Yarwun Facility in accordance with the requirements of the IMO DG Code with UN numbers, the Class 6 dangerous goods label and the environmentally hazardous substance label.

A container intended for transport has documentation prepared in accordance with the IMO DG code, which is provided to the shipping agent. A copy of the marine documentation is retained at the Yarwun Facility.

ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd., and MLB Manfred transport Orica cyanide by sea to various destination ports. All packaging and transportation is carried out in accordance with the IMO DG Code.

Due diligence assessments of ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred were undertaken on behalf of Orica to verify that the shipments are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the conduct and shipping of cyanide product by the carriers.

No cyanide is transported by air within the scope of this Supply Chain.

3.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

Orica is	☒ **in full compliance with**	**Transport Practice 1.6**
	☐ in substantial compliance with	
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica does not employ transport drivers or directly operate transport vehicles in its Supply Chain.

The due diligence assessments for ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred found that their vessels have continuous means of tracking and communication during voyages. Additionally, each service provider has systems in place to track individual containers from point of origin through to the destination port.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets (SDS).

ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred onshore representatives and vessels have the software capability to track individual containers. This service is available from the time they are booked onto a vessel, right through the entirety of the journey, until they are received at the nominated destination port.

For ports of departure in Australia, the Australian Maritime Safety Authority (AMSA) develops and implements policies, statutes and regulations governing the carriage of dangerous goods and other goods by ships in accordance with relative national and international requirements. This includes supervising the safety of ships carrying dangerous goods and processing declarations made by ships carrying dangerous goods.

Carriers are required to declare dangerous cargo to AMSA before arriving/leaving at the port.

For destination ports the due diligences found that ports in the Supply Chain are IMO members and ISPS Signatories (ISPS excluding Tanzania).

As IMO members and to comply with the requirements of the IMO DG Code, vessels are required to declare dangerous cargo before arriving/leaving the port to Authorities or stevedoring service providers.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and SDS.

At each destination port stevedoring service providers or terminal managers operate their own choice of information management and cargo tracking systems. These systems include advanced terminal software programs capable of tracking individual containers that are unloaded from carriers and transferred to laydown areas or placed onto another means of transportation (trans-shipping, ground or rail).

Orica's shipping agent can provide updates on the status of shipments on an as needs basis. In each case this includes an estimate on arrival/departure times, where trans-shipping will occur and the time that discharge from the destination port occurs.

Inventory controls, marine transportation and chain of custody documentation processes are implemented to prevent the loss of cyanide during shipment.

Orica requires their carriers to implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment.

Orica requires that their contractors carry records indicating the amount of cyanide in transit and SDS are available during transport. The amount of cyanide in transit, the packing certificates and the SDS are contained within the marine documentation, this includes the shipper's declaration, container packing certificate and quarantine (fumigation) certificate, which accompany the cargo throughout the journey.

Orica utilises select ports and carriers along its Supply Chain and has undertaken due diligence assessments to verify that the shipments are managed in accordance with Orica's and the ICMC's requirements.

3.2 Principle 2 – Interim Storage

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

3.2.1 Transport Practice 2.1

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

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 2.1**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Orica 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 does not operate trans-shipping or interim storage facilities within its Supply Chain, but circumstances may arise where trans-shipping of cyanide product is required. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery.

Orica has no control over when and where this happens, but through the completion of due diligence assessments has satisfied itself that the carriers used (ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred) undertake the trans-shipping of product in accordance with the IMO DG Code and regulations for the handling of dangerous goods pertinent to that port.

Depending on weather, cargo types and other operational matters, carriers may tranship their cargo form one vessel to another.

Trans-shipping ports were not assessed as part of the due diligence assessments carried out on behalf of Orica. The due diligence assessments did not identify any issues of concern with regards to the management or transport of cyanide by ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, MLB Manfred– this extends to the carrier's ability to select a suitable port for the purpose of trans-shipping when required.

The due diligence assessments of the ports identified that temporary storage or set down of product is conducted in accordance with the requirements of the IMO DG Code and other relevant international, and where developed, local dangerous goods handling regulations.

Ports

The due diligence assessments of the ports identified that temporary storage or set down of product is conducted in accordance with the requirements of the IMO DG Code and other relevant international, and where developed, local dangerous goods handling regulations.

Abidjan, Côte d'Ivoire: When containers of dangerous goods cannot be placed directly onto onwards transportation, they are sent to a secure holding facility under escort of the PAA. All handling of dangerous goods, on and off vessels, must have prior authorisation by the Harbour Master who sets the timeframes that such handling may take place. Cyanide product remains in the containers that were packed at the Yarwun Facility. The packaging has a sealed plastic liner that stops the contact of product with moisture or humidity. The IBCs holding cyanide are stored within shipping containers which are transferred from vessel to trailer and moved to a designated dangerous goods storage area within the terminal confines.

The port of Abidjan is also certified under OHSAS 18001:2007 (health and security). There are regular security patrols, restricted points of access, video surveillance and the capability to call upon certain specialised State Defence and Security Forces. All handling of dangerous goods, on and off vessels, must have prior authorisation by the Harbour Master who sets the timeframes that such handling may take place.

Containers are placed in an open-air environment to prevent the build-up of hydrogen cyanide gas.

Auckland, New Zealand: For the import of dangerous goods, the port enforces either a Direct to Motor Vehicle (DMV) or L&R process. Allowable dwell times are specified based on dangerous goods class and UN numbers, the dwell time commences from the time the container is discharged onto the wharf. The cyanide allowable dwell time is 72 hrs.

The port of Auckland has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. Cyanide remains sealed within containers preventing contact with water and other incompatible materials.

The port of Auckland has a statutory obligation to comply with, amongst others, the security requirements of the *Port's New Zealand Customs (NZC) Procedure Statement,* the *Customs & Excise Act 1996* and the *Maritime Security Act 2004*. The primary provisions being laid out in the latter – *Part 2 Ship and Port Facility Security, Subsection 40 – Port Facility Security Plans* and *Part 3 Preventative Security Measures, Subsection 46 – Restrictions with Respect to Port Security Areas*.

Brisbane, Australia: Cyanide transited through the port of Brisbane is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. Cyanide transited through the port of Brisbane remains sealed within containers preventing contact with water and other incompatible materials.

Port security officers conduct regular mobile patrols. All persons wishing to access the port must be able, when requested, to demonstrate they have official business in the port. All crew members leaving a security-controlled berth/terminal must show appropriate identification for example, a seafarer's book or a copy of their passport to gain re-entry. All visitors and service providers to vessels must be included on the agent's list of authorised visitors and must be able to provide proof of identity. Port access by members of the public is prohibited.

Several cameras are stationed around the port to assist security officers monitoring the operations. It is an offence to enter or leave the port area by any means other than a designated entrance or exit.

Melbourne, Australia: Unless kept in a restricted area, quantities of dangerous goods exceeding 500 kg are delivered to, and removed from, the designated berths or storage areas within 12 hrs of being loaded/unloaded from a vessel. Cyanide transited through the port of Melbourne is temporary and remains on site for less than 12 hrs, as required. This is a management measure to minimise potential for accidental releases during storage. Cyanide transited through the port of Melbourne remains sealed within containers preventing contact with water and other incompatible materials.

In response to the risk of terrorism, the Commonwealth Government of Australia has interpreted the International Ship and Port Facility and Security (ISPS) Code, through its introduction of the Maritime Transport and offshore Facilities Security Act (MTOFSA) and Regulation 2003. The port of Melbourne is a security regulated port as set out in the MTOFSA.

To fulfil regulatory requirements, the port of Melbourne has an approved Maritime Security Plan (MSP) which excludes Station Pier as VPCM has its own Station Pier MSP.

A person must be nominated in writing by the cargo terminal hirer, shipping agent or ship's Master, as an approved person to enter the cargo terminal area of Station Pier. This includes international seafarers.

Worksafe Victoria's *Code of Practice for the Storage and Handling of Dangerous Goods* (2013) provides guidance for spill containment requirements for dangerous goods storage facilities/areas. Occupiers storing and handling dangerous goods must ensure that in each area where dangerous goods are stored or handled, provision is made for spill containment that will eliminate the risk from any spill or leak of solid or liquid dangerous goods and must also be able to contain within the premises, the dangerous goods that have been spilled or leaked and any solid or liquid effluent arising from an incident.

Rockhampton (formerly Port of Alma), Australia: Cyanide transited through the port of Alma is temporary and remains on site for a short period of time. This is a management measure to minimise potential for accidental releases during storage. Cyanide transited through the port of Alma is segregated and remains sealed within containers preventing contact with water and other incompatible materials. The port has secure container yards available for use. These areas are concreted, secured via a perimeter fence and under floodlights at night.

Cyanide transited through the port of Alma is segregated and remains sealed within containers preventing contact with water and other incompatible materials.

Burnie, Australia: Cyanide transited through the port of Burnie is temporary and remains on site for a short period of time. This is a management measure to minimise potential for accidental releases during storage. Cyanide transited through the port of Burnie remains sealed within containers preventing contact with water and other incompatible materials.

The port of Burnie uses isolation as a control measure to control physicochemical risks. Hazardous chemicals, including cyanide, are separated from any chemicals or other items/substances that may be incompatible. This is achieved by distance, barriers, or a combination of both.

Locations used for the storage of hazardous substances also take into consideration the requirement for adequate ventilation.

Worksafe Tasmania's *Code of Practice for Managing Risks of Hazardous Chemicals in the Workplace* (2012) provides guidance for spill containment requirements for dangerous goods storage facilities/areas. Occupiers storing and handling dangerous goods must ensure that in each area where dangerous goods are stored or handled, provision is made for spill containment that will eliminate the risk from any spill or leak of solid or liquid dangerous goods and must also be able to contain within the premises, the dangerous goods that have been spilled or leaked and any solid or liquid effluent arising from an incident.

Gladstone, Australia: Cyanide transited through the port of Gladstone remains sealed within containers preventing contact with water and other incompatible materials. The container storage area is fenced with a secure entrance and a boom gate. GPC is responsible for the security and protection of the port's infrastructure and assets, and the provision of risk-based security services.

Tauranga, New Zealand: All dangerous goods are stored in accordance with the detailed management procedures as specified in the Dangerous Goods and Hazardous Substances Code of Practice Section 5. At least two (2) days before the arrival of a vessel, the Agent or Stevedore is to supply a copy of the dangerous goods declaration for every consignment which carries an IMO DG classification. Cargo containing dangerous goods is stored in pre-planned positions. There are a series of maps that indicate which classes of dangerous goods can be stored in each location.

Access to the wharf area is restricted to authorised persons only. Entry on to the port area is controlled by barrier arms at all road gates. Surrounding roads, Rata Street and Tasman Quay gates are only open to heavy vehicles and light vehicles carrying security access cards. The Hull Road gate is manned 24 hrs a day, seven days per week, and is monitored by a Customer Service Centre. Only heavy vehicles, authorised persons, and visitors with legitimate business reason are permitted on to the port. The gate at Sulphur Point on the Tauranga side of the harbour is manned 24 hrs per day.

Chalmers, New Zealand: For the import of dangerous goods, the port adopts either a Direct to Motor Vehicle (DMV) or Land & Remove (L&R) process. Allowable dwell times are specified based on dangerous goods class and UN numbers, the dwell time commences from the time the container is discharged onto the wharf. Codes of Practice ensure that cyanide is stored securely and with adequate ventilation.

All entry to the port is controlled and subject to the possession of acceptable photographic identification. The port and wharf area are closed to general public access and entering the port facilities is deemed as consent for identification checks and searching. Failure to consent to the security measures in place will result in admittance being denied.

Lae, Papua New Guinea: There is an overarching container storage plan. Segregation of dangerous goods is completed in consultation with the stevedores. When cyanide containers are discharged from a vessel, the normal practice is for the containers to be loaded directly on to trucks to remove them from the port. At the port of Lae, PNG Ports has a fee schedule in place for dangerous goods that does not allow any free storage time. This assists in minimising the amount of dangerous goods left on the site. If a cyanide container is delayed on the port (e.g. while customs clearance is being completed), containers are stored with other dangerous goods and appropriately segregated. The port has designated smoking areas which are away from where the cyanide is being handled. Personal protective equipment required to be worn at the port includes: hard hat, safety boots, and high visibility shirt/vest.

Entrances and exits to the site are manned by security guards. There are security guards at the berth face and patrolling the site. There is a fence around the perimeter of the site. CCTV is also used. On the water side, there is a 100 m exclusion zone. Ship tracking is also conducted. Personnel on site carry access identification cards. Visitors to site need to make prior arrangements to gain access.

Busan, South Korea: The port of Busan has dedicated dangerous goods areas for hazardous goods awaiting loading to arriving vessels. The port is not used for the interim storage of cyanide as it is a transhipping depot used to transfer cyanide containers from trucks to ships. Busan's Korail Interim Storage Facility is the dedicated Dangerous Goods storage facility, located in a secure rail shunting yard. Cyanide remains sealed within containers preventing contact with water and other incompatible materials.

The area in which the containers are stored whilst transiting the port is suitable to effectively contain any spillage of solid cyanide that may occur. The facility is well demarcated, certified to handle and store all categories of dangerous goods, including Class 6.1, and contains fire-fighting equipment.

Shanghai, China: The port of Shanghai has a dedicated dangerous goods transit area for dangerous goods. Appropriate signage is displayed in this area. The port operations for dangerous goods are registered and licensed by the government. The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

The port is listed on the ISPS site as accredited. An electronic card access system is in place to enable only authorised access to the port area. Containers departing the port are checked against documentation for matching container numbers and product detail.

Cyanide transited through the port of Shanghai remains sealed within containers and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. The area where the containers are placed is considered suitable to effectively contain any spillage that may happen.

Callao, Peru: Terminals have surveillance systems that monitor the security of goods via CCTV coverage. Terminals operate in a pedestrian free environment and are brightly lit at night. Safety signage and on-site security measures are evident. Containers are packaged and placarded in accordance with IMO DG labelling requirements and storage areas show relevant signage regarding no smoking, no open flames, eating and drinking is not permitted and the PPE requirements. It is the policy of the port that all containers of cyanide are to be removed from the port within forty-eight hrs following discharge of the vessel.

During transhipping, manifests are handed over from the vessel to the terminal operators which include the weight and any hazards associated with the containers. This information is captured in the terminal operator's computer systems, which can identify dangerous goods consignments, determine the class of dangerous goods and establish the segregation requirements for that product as required by the IMO DG Code.

Containers are stored at the port with adequate ventilation to prevent build-up of hydrogen cyanide gas. The product remains sealed within containers and the area of storage is suitable to effectively contain any spillage that may occur. Local specialised responders are on hand to aid in the event of a serious incident.

Buenos Aires, Argentina: The port operates under a suite of International and National regulations that ensures its compliance with regards to the handling and storage of dangerous goods. *PNA Regulations 9/97 Transport by vessels of dangerous goods, safety standards for transport by charcoal vessels and 3/96 Standards for the approval of packaging and packaging containing dangerous goods* outline the requirements for all ports.

A previous due diligence ascertained that the shipping containers containing cyanide product are stored in a designated dangerous goods storage area (segregated according to the international segregation guidelines) and are placed on a concrete surface which has a safe floor loading factor in an open-air area. The product remains in the containers that were packed at the cyanide facility (the cyanide packaging has a sealed plastic liner which stops the contact of product from moisture or humidity) ready for loading for onward transport.

The due diligence assessed security measures at the port and ascertained that the container storage area at the port has full CCTV coverage and that security measures are present throughout the port. The terminal adopts a range of strict internal controls and uses state-of-the-art technology to optimise operation and the safety. It is noteworthy that in 2009 the ISO 28000 certification (Supply Chain Security Management) was obtained.

The port operates under a suite of International and National regulations that ensures its compliance with regards to the handling and storage of dangerous goods. *PNA Regulations 9/97 Transport by vessels of dangerous goods, safety standards for transport by charcoal vessels and 3/96 Standards for the approval of packaging and packaging containing dangerous goods* outline the requirements for all ports.

Puerto Deseado, Argentina: The port of Puerto Deseado operates under a suite of International and National regulations that ensures its compliance with regards to the handling and storage of dangerous goods. *PNA Regulations No.9/97 Transport by vessels of dangerous goods, safety standards for transport by charcoal vessels* and *No.3/96 Standards for the approval of packaging and packaging containing dangerous goods* outline the requirements for ports.

Cyanide transited through the port of Puerto Deseado is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. All cyanide transited through the port of Puerto Deseado remains sealed within containers preventing contact with water and other incompatible materials.

Santos, Brazil: Relevant warning signage is provided at the port of Santos. Containers are packaged and placarded in accordance with the requirements of the IMO DG Code labelling requirements displaying the relevant warning and safety detail. Cyanide is not stored at the port of Santos. Containers on arrival, after appropriate customs and country relevant quarantine clearances, are collected by the transporter operating on behalf of the end destination user and transported under suitable convoy conditions. Whilst containers of cyanide are in the port environs, temporary signage is provided warning that smoking, open flames and eating or drinking in the vicinity are prohibited.

The port of Santos is ISPS (International Ship and Port Security) certified. The port has its own security procedures in place with a 24-hour, 7-day security presence.

Containers on arrival and awaiting clearances are held in the open with relevant segregation to prevent the possible build-up of hydrogen cyanide gas. A windsock is in the area to provide wind direction information.

Puerto Angamos, Chile: The port of Puerto Angamos aims to have dangerous cargo placed directly onto a trailer and removed from the facility via an ICMI-certified transporter, and under escort of the port authority. However, when this cannot occur, the port has a dedicated storage area for specialised products including dangerous goods; cyanide containers are segregated and stacked separately according to the provisions of the Code and all cyanide remains sealed within containers preventing contact with water and other incompatible materials.

The port has full CCTV coverage, is fully lit at night and the whole of the port area has controlled access.

Puntas Arenas, Chile: The port of Punta Arenas aims to have dangerous cargo placed directly onto a trailer and removed from the facility via an ICMI-certified transporter, and under escort of the port authority. However, when this cannot occur, the port has a dedicated storage area for specialised products including dangerous goods; cyanide containers are segregated and stacked separately according to the provisions of the Code and cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Veracruz, Mexico: The port of Veracruz must adhere to the requirements of *official Mexican Standard NOM-010-SCT2/2009*, *Compatibility and segregation provisions for the Storage and transportation of hazardous substances, materials and waste* and *NOM-023-SCT4-1995 Conditions for the management and Storage of dangerous goods in ports, terminals and sea units.*

These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form, from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products. Signage is displayed to show smoking is prohibited, sources of ignition are avoided, and proper precautions are taken with regards to personal protective equipment for the handling of dangerous goods.

The port or terminal operator ensures that the areas where dangerous goods are handled and stored is monitored and that personnel involved in such operations have received adequate training. The operator keeps a permanent record of any dangerous goods encountered in the port area and ensures that in the areas where the products are handled and stored, personnel have accessible information on emergency procedures.

Tema, Ghana: The port of Tema has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. Whilst at the port, temporary signage is provided to warn of the presence of solid cyanide and the safety requirements whilst the product is located here, including a ban on the consumption of food and beverages and open sources of ignition, including smoking, in the specific area and the specific personal protective equipment required in this specific area. The port provides a dedicated area for workers to eat and drink which is well away from the area in which the product is located.

The port has restricted access and security processes, including optimal character recognition, biometric identify cards and CCTV. The port has perimeter fencing and terminal entry and exit gates are monitored on 24-hour basis. The harbour master has oversight of nautical operations within the port, including pilotage, towage, mooring and unmooring, and vessel traffic services. Software programs control container movement through the ports. The port has on-site security personnel, this includes a mobile security team and port security personnel stationed at entry points.

The port has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. Containers departing the port are checked against documentation for matching container numbers and product detail. Cyanide transited through the port remains sealed within containers. Seals are individually numbered and tamper evident. The area into which the containers are placed awaiting clearance is well ventilated to prevent the build-up of hydrogen cyanide gas and is suitable to contain any spillage that may occur.

Takoradi, Ghana: Cyanide transited through the port of Takoradi remains sealed within containers preventing contact with water and other incompatible materials. Seals are individually numbered and tamper evident. Admission of solid cyanide through the port of Takoradi is limited to a specific customer. Solid cyanide is only held at the port of Takoradi for a short period to enable completion of specific Ghanaian governmental customs and quarantine clearances. The port provides a dedicated area for workers to eat and drink which is well away from the area in which the product is located.

The port of Takoradi is accredited under the ISPS Code. The port has an on-site security presence and includes a mobile security team. Port security personnel stationed at the access to the port check the authority of drivers accessing the port area.

Conakry, Guinea: Solid cyanide that transits the port is collected by the relevant carriers as soon as possible after arrival. Express clearances are initiated where possible to minimise the transit period. During periods of transit, containers of solid cyanide are segregated from other containers and the area is signed alerting the presence of the product and prohibiting smoking, drinking and eating outside set areas in the port. All personnel, outside those operating top lift forklifts, are warned to keep away from the containers.

The port is a secure area with an on-site security presence. Security watch is compulsory for all ships carrying cyanide. The port's security personnel are armed and trained to deal with intruders. The port's security presence is a facet of the port's ISPS Code protocols.

Cyanide remains sealed within containers. The area of transit storage is well segregated and in an open area to prevent the build-up of hydrogen cyanide gas.

Dakar, Senegal: The Senegal Port Authority states that the port of Dakar has made all financial and material arrangements to align its facilities and operations with the directives emanating from the International Convention for the Safety of Life at Sea (SOLAS) 1974, convention. Therefore, every ship applying for permission to enter, and every port facility operator working in the port of Dakar must ensure compliance with the security and safety requirements for ships and port facilities as issued by the IMO.

Storage in transit does occur at the Port while customs clearance and carrier releases are performed. The Port of Dakar contains 112.5 thousand square meters of open surface storage, 48.8 thousand square meters of covered storage space, and 15 thousand square meters of cold stores. In addition, it has 13 hectares of surface for storing containers. There is limited information available on the storage facilities at the port storage controls.

2016 saw the strengthening of security provisions at the port with the establishment of a corps of 450 officers trained in ISPS code standards and the reinforcing of the perimeter and access point security measures. Naval assets for maritime and ground surveillance (patrol vehicles, video surveillance at the port facilities) have been put in place.

Nouakchott, Mauritania: A very limited quantity of product is transported via the port of Nouakchott and this is always for a specific customer's needs. Express clearance is performed by the importer and containers are generally collected on arrival for onward transportation to the customer site. If a delay occurs, the containers are transferred to a holding site and a security presence is provided. Security personnel are provided with equipment suitable to meet minimal personnel protective equipment requirements and the provision of warning signage prohibiting unauthorised personnel in the area.

The area in which containers are located, if warranted, is well segregated and ventilated to prevent the build-up of hydrogen cyanide gas.

Mombasa, Kenya: Upon arrival, inbound containers are discharged from vessels and taken by truck or tractor to a designated Container Freight Station (CFS). Cyanide is placed in a segregated area whilst awaiting relevant clearances. This area is clearly signed providing appropriate warning to all port personnel.

Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. Additionally, signage is displayed prohibiting smoking and the consumption of foodstuffs and liquids in the areas where hazardous goods are being stored.

Each CFS is a self-contained facility with government agencies on site, including Customs, police, the Standards Authority and a sanitary inspection department. Each container awaiting clearance for on-carriage resides securely within a given CFS until cleared. The port has a full-time security presence which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage may be subject to an additional security presence.

Cyanide product remains sealed within containers. Containers are in a segregated area that is open to the air to prevent the build-up of hydrogen cyanide gas.

Cyanide product remains sealed within containers. Containers are in a segregated area that is open to the air to prevent the build-up of hydrogen cyanide gas.

Dar es Salaam, Tanzania: Cyanide on arrival at Dar es Salaam is placed in a segregated area awaiting relevant governmental clearances. This area, when cyanide is present, is clearly signed providing appropriate warning to all port personnel. Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. 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. 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 is accredited under the ISPS Code and is classed as a secure area. The port has a full-time security presence which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage are subject to an additional security presence. The port security egress checkpoints check a driver's documentation to ensure approval has been granted for the removal of the container, that the container number physically matches with the documentation and that the seal is intact on the shipping container.

Cyanide on arrival at Dar es Salaam is placed in a segregated area awaiting relevant governmental clearances. Cyanide product remains sealed within containers. Containers are stored 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.

Walvis Bay, Namibia: Namibian Port Authority (NAMPORT) Regulations state that "…the handling of dangerous cargoes shall be in accordance with the rules laid down in the IMDG Code..." and there are entry requirements for all vessels carrying dangerous goods. The port area has a closed perimeter with restricted access that is controlled by security personnel. There is a dedicated storage area for specialised products including dangerous goods; the container storage area has CCTV installed and remains fully lit at night. The port area has a closed perimeter with restricted access that is controlled by security personnel. There is a dedicated storage area for specialised products including dangerous goods; the container storage area has CCTV installed and remains fully lit at night. The Control Centre for the port is equipped with computer management systems for alarms, dangerous goods tracking, emergency communications, records of access/egress and video surveillance. Walvis Bay has dedicated storage areas for specialised products including dangerous goods; whereby cyanide containers are segregated and stacked separately. Cyanide product remains sealed within containers, stored within the secure dangerous goods storage area.

Laem Chabang, Thailand: The port of Laem Chabang has a dedicated dangerous goods warehouse for the storage of specialised products including cyanide.

Cyanide transited through the port of Laem Chabang is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. Cyanide is considered a Class 3 Dangerous Goods item and when discharged from a vessel is taken immediately to the Dangerous Goods Warehouse.

Cyanide transited through the port of Laem Chabang remains sealed within containers preventing contact with water and other incompatible materials.

Surabaya, Indonesia: Cyanide is stored within a secure and dedicated dangerous goods storage warehouse, 6 500 m^2 in size.

The port has a CCTV surveillance system of 32 cameras and utilises three patrol cars, two metal detectors, and two X-ray units. TPS port security has been ISPS compliant since June 2004. Seaside security is managed by KPLP/Gamat boat patrols and land side security is handled by approximately 188 port security staff employed by PT Pelabuhan Indonesia (Pelindo) III.

Jakarta, Indonesia: The port of Jakarta operates under a suite of National regulations that ensure compliance with the above. For the handling and storage of dangerous goods, these regulations ensure that shipments of cyanide are authorised for discharge from the vessel, handled by appropriately trained personnel, stored in designated and secured areas, segregated according to dangerous goods classes and removed from the port in a timely manner.

The port has restricted access and the Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. All cyanide transited through the port of Jakarta remains sealed within containers.

Regulations ensure that shipments of cyanide are authorised for discharge from the vessel, handled by appropriately trained personnel, stored in designated and secured areas, segregated according to dangerous goods classes and removed from the port in a timely manner.

Cartagena, Colombia: The entire port area has a closed perimeter with restricted access that is controlled by the security service and port Police. CCTV is installed, with permanent recording on digital media, connected through fibre optics and centralized at a Control Centre.

The Control Centre for the port is equipped with computer management systems for alarms, dangerous goods, emergencies, communications, accesses, video surveillance, recording, etc. and is operational 24 hrs a day, 365 days a year, with the service being provided by appropriately qualified staff.

Buenaventura, Colombia: The port of Buenaventura uses an Access Control System to monitor if the persons entering the port are appropriately identified and to minimise unauthorised access. The port also implements a Perimeter Control System to prevent intruder access through the outside perimeters of the port facilities. The system consists of 4800 m of sensor cable controlled by 23 processors that interpret the signals received, and then transmit information to the control centre.

The port has CCTV to monitor and record all port operations and activities. It has 370 fixed and panning cameras distributed throughout the port and 21 digital recorders to store security events 24 hrs/day. The system also includes special equipment for monitoring the internal navigation channel under varying visibility conditions.

Klang, Malaysia: All dangerous goods passing through port Klang must be declared to the Authority 48 hrs before the arrival of the vessel. Dangerous Goods declaration is done via electronic submission since 2000.

The port has a Dangerous Goods Department that conducts supervision and inspections where dangerous goods are handled at the port and oversees that dangerous cargoes stored and handled in the port comply with the laws in force, therefore minimising the potential for accidental releases. In addition to ISPS Code compliance, port Klang has a 24-hour emergency response team, 24-hour surveillance at the entrance and exit points, patrol vehicles and Closed-Circuit TV (CCTV) to monitor and record port operations and activities.

Port of Izmir: Storage facilities at Izmir consist of 215,940 m^2 open storage and 26,978 m^2 covered areas including a designated hazardous cargo warehouse. Storage in transit may occur if receipt at the port is delayed. Cargo handling and storage services are provided at the port using modern equipment and staff 7 days a week, 24 hrs a day. The ISPS “International Ship and Port Facilities Safety Code” is implemented and security and access control are provided at the port including CCTV, controlled access points and perimeter security.

Port of Sudan: Storage facilities at the port of Sudan consist of an 85,000 m^2 open storage for dangerous goods at the South Quay container terminal. Storage in transit may occur in the event that receipt at the port is delayed. Cargo handling and storage services are provided at the port using modern equipment and staff 7 days a week, 24 hrs a day. The ISPS “International Ship and Port Facilities Safety Code” is implemented and security and access control are provided at the port including controlled access points and perimeter security.

Port of Casablanca: There are storage facilities at the port of Casablanca for containers at both of the container terminals, however it is not clear whether there is dedicated storage area for dangerous goods.

Cargo handling and storage services are provided at the port using modern equipment and staff 7 days a week, 24 hrs a day. The ISPS “International Ship and Port Facilities Safety Code” is implemented and security and access control are provided at the port including controlled access points and perimeter security.

Port of Monrovia: There are no storage facilities at the port of Monrovia for cyanide containers. Where authorisation for import is granted containers must be transported outside of the port operational area upon discharge.

Port of Mersin: The Port of Mersin has a continuous security and operational monitoring system, the overall running of which is controlled via the centralised TOS. There are CCTV cameras at numerous points within the port, and entry/exiting is controlled through biometric identification cards. The port has introduced container seal control application system which ensure full container seal control is made, and is ISPS certified.

Port of Lazaro Cardenas: The Port of Lazaro Cardenas must adhere to the requirements of Official Mexican Standard NOM-010-SCT2/2009, Compatibility and segregation provisions for the storage and transportation of hazardous substances, materials and waste and NOM-023-SCT4-1995 Conditions for the management and storage of dangerous goods in ports, terminals and sea units. These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products. Available services applied to the port of Lazaro Cardenas are:

- Controlled points of access/egress, perimeter fences, anchorages, maneuver areas and berthing
- Facilities for cargo, storage areas and load handling equipment
- System of electrical distribution networks, telecommunications, and computer networks
- Vessels serving the port (tugs)
- Surveillance equipment and protection system (automated CCTV systems).

Port of Guaymas: The Port of Guaymas must adhere to the requirements of Official Mexican Standard NOM-010-SCT2/2009, Compatibility and segregation provisions for the Storage and transportation of hazardous substances, materials and waste and NOM-023-SCT4-1995 Conditions for the management and Storage of dangerous goods in ports, terminals and sea units.

These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form, from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products.

The port or terminal operator must ensure that the areas where goods are handled and stored be monitored at all times and that personnel involved in such operations have received adequate training. The operator shall keep a permanent record of any dangerous goods encountered in the port area and will ensure that in the areas where the products are handled and stored, personnel have accessible information on emergency procedures.

All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials. It will also ensure that in such areas signage is displayed to show smoking is prohibited, sources of ignition are avoided and proper precautions are taken with regards to personal protective equipment for the handling of dangerous goods.

Port of Lyttelton: Hazardous substances are managed in accordance with local regulations, including the Maritime Transport Act 1994, The Hazardous Substances and New Organisms Act 1996 (HSNO) and the Health and Safety at Work (Hazardous Substances) Regulations 2017. All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Port of Corinto: The port is required to meet international standards for security measures as per the IMO, and is monitored by the Directorate General of Water Transport, EPN. The Corinto Port security and protection is regulated by national security and defence policies as highlighted under chapter VI, security and maritime port protection, Law No. 838 General Law of Ports of Nicaragua (Republica De Nicaragua, 2013). All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Recent ICMI supply chain Re-Certification Audit reports (MSS Code Certification Service, 2021), as conducted for Draslovka Global Ocean Supply Chain, have found that the Corinto Port is considered a well-operated and secure facility when it comes to minimising the potential for accidental releases of sodium cyanide, and the port is equipped with appropriate facilities and infrastructure.

Port of Sihanoukville: All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials. In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case (IMO, 2019).To safeguard vessel management the installation of Vessel Traffic Management System, navigational buoys and maintenance of vessel channels were installed.

Port of Belawan: The Belawan Port is considered compliant with the International Ship and Port Security Service Code (ISPS Code). The ISPS code provides a framework through which ships and port facilities are able to detect and rectify the threats posed to a maritime security. As a state member of IMO and MARPOL (the international convention for the prevention of pollution of the marine environment by ships from operational or accidental causes), Indonesian port authorities are required to maintain compliance with the safety and operational regulations for the inspection and reporting of an incident involving harmful substance.

As per the 'Regulation of the Minister of Trade No. 7 of 2022', regarding the distribution and control of hazardous substances, consignors for the distribution of certain hazardous substance and are required to obtain a permit to handle hazardous goods, and must report the distribution results to the regulatory authority. As per the government regulation (No. 74/2001) for hazardous and toxic substance management, the consignor must obtain an appropriate license and ensure suitable storage facilities are available for segregation of substances, and fitted with the appropriate signage/labels.

Port of Subic Bay: In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

Port of Port Moresby: In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

As a state member of IMO and MARPOL 73/78 (the international convention for the prevention of pollution of the marine environment by ships from operational or accidental causes), it ensures the requirements for inspection and reporting of an incident involving harmful substance (IMO, 2019).

The Marchant Shipping (Dangerous Goods) Regulation 2007 of New Papua Guinea requires any dangerous goods to be thoroughly inspected to avoid leakages or spillage before taking over. PNG ports work to the requirements of the International Maritime Organization’s International Ship and port Facility Security Code.

Port of Cape Town: In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities. At the port, it is a requirement that necessary arrangement must be made with the Port Captain to ensure safe handling of all hazardous cargo and dangerous goods (TNPA, 2010). All the South African ports are required to follow the IMDG Code at all times from pre-shipment to place of delivery. Hazardous cargoes are removed or transported without any delay directly to rail/road or direct to ship from rail/road depending on the type and class of hazardous goods. The hazardous cargoes falling under class 3, class 4, class 6, and class 8 are removed within 48 hours from the port.

The Port has private security companies available for 24 hours on board services. TNPA installed advanced CCTV for some of the terminals and also Automatic identification System (AIS) that allow ship identification. The Port requires appointment of Port Security Officer and Port Facility Security Officer for each terminal who’s responsible for security planning, implementation and maintenance at the port facility.

Port of Durban: The port employs private security companies, who are available 24-hours, including for on board services. TNPA has installed advanced CCTV for some of the terminals and also Automatic Identification System (AIS) that allow ship identification. The port requires the appointment of a Port Security Officer and Port Facility Security Officer for each terminal. This person is responsible for security planning, implementation and maintenance at the port facility. Over 120 cameras are used around the port facilities. The command and control system helps in smart object detection, item tracking and recording sensors. In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

All the South African ports are required to adhere with the IMDG Code at all times. Hazardous cargoes are removed or transported without any delay directly to rail/road or direct to ship from rail/road depending on the type and class of hazardous goods. The hazardous cargoes falling under class 3, class 4, class 6, and class 8 are removed and transported within 48 hours from the port.

Port of Beira: The Port has 350,000 sq. metres of well illuminated container yard with the capacity of 11,200 TEUs and includes a dedicated international maritime dangerous goods (IMDG) storage area (Ports & Ships, n.d).

As part of port security measures, a 6 km electro-welded security fence has been constructed and a CCTV surveillance system is in place. The port complies with international security standards with current ISPS level 1. While handling cargo, necessary safety procedures are in place (Logistic Capacity Assessment, n.d).

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

3.3 Principle 3 – Emergency Response

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

3.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 3.1**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica has developed a detailed emergency response document to provide emergency response guidance for specific mine site, storage facilities and transport incidents involving Orica's Product.

The document has been developed by Orica to provide guidance in the development of site and transport route emergency response plans for the management of incidents involving spillage of cyanide product.

Orica requires that transporters involved in the shipment of cyanide have plans that cover spill response procedures outside of the Yarwun gate, up to the end user destination. Orica aid and support in this role.

Whilst Orica's product is embarked on ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of its carriers to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require carriers to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Each operator implements their own system of safety and emergency response management that extends to emergency situations involving cyanide and other dangerous goods. Emergency responders, as well as dangerous goods technical experts, are available to respond and assist in emergency situations.

The due diligence assessments found that the ports used by Orica are performing dangerous goods handling duties in accordance with international and local regulations. Ports selected in the Supply Chain are located in IMO member countries, member nations must ensure that ports comply with the requirements of the IMO DG Code.

The due diligences also found that the ports are certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90) except for Port of Moresby, Belawan, Sihanoukville, and Corinto. States that are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises. PNG is member of South Pacific Regional Environment Programme (SPREP) and party to the SPREP which address marine pollution. PNG, Indonesia, Cambodia, and Nicaragua are MARPOL member nation and addresses ship sourced pollution as per the MARPOL regulation.

3.3.2 Transport Practice 3.2

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

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 3.2**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Whilst Orica's product is embarked on carriers, all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments to verify that the shipments occur in accordance with the IMO DG Code. Due diligence assessments have found that there were no issues of concern regarding the management and shipping of cyanide product by any of the shipping lines.

Orica retains a technical and advisory role in an emergency and can provide resources and personnel (depending on where an incident takes place) to assist emergency services in the response to an incident involving cyanide.

Orica require carriers to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility. The level of capability is assessed through the due diligence and Carrier Assessment process.

The due diligences assessments found that ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred each carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code. Each operator implements their own system of safety and emergency response management that extends to emergency situations involving cyanide and other dangerous goods at sea.

The due diligence assessments found that the ports used by Orica have appropriate emergency response capabilities to deal with potential releases of dangerous goods.

Orica utilises select ports and carriers along its Supply Chain and has undertaken due diligence assessments to verify that the shipments are managed in accordance with Orica's and the ICMC's requirements.

Port of Brisbane Incident

On 2 December 2020 an incident involving the release of solid sodium cyanide product occurred at the port. Two shipping containers were damaged in the incident and sodium cyanide solids were spilt on to the concrete wharf and into the hold of the vessel. There was no release to the environment and no cyanide exposure resulting in medical intervention reported.

Queensland Fire and Emergency Services (QFES) were promptly on the scene, supported by Queensland Police and QFES appointed scientists. QFES is the responsible authority for HAZMAT incidents in Queensland and took control of the scene. An exclusion zone was established as a precaution and the spill was cleaned up by QFES with no requirement for ongoing monitoring or management.

The damaged containers were patched and wrapped on wharf to prevent further loss and transported off wharf to a secure major hazard facility for further assessment.

Orica were contacted by the responders and provided technical support and advice as subject matter experts and the consigner of the goods in accordance with their response plan.

3.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 3.3**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Carriers

Whilst Orica's product is embarked on ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of carriers used in its Supply Chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans, including current contact information, and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Ports

Orica has completed due diligence assessments on the ports and selects Ports with suitable infrastructure and consignment tracking. Practically the notification will fall on the carrier or road transporter to provide notification to Orica.

The 2020 incident involving at the port of Brisbane confirmed there are processes in place for notifying the consignee and regulatory authorities.

Orica does have a written procedure (*Orica Procedure, Notifying Cyanide Incident to ICMI, Revision 1.0, 20 June 2022 for notifying ICMI*) of any significant cyanide incidents, as defined in ICMI's Definition and Acronyms document.

3.3.4 Transport Practice 3.4

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

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 3.4**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Orica is in FULL COMPLIANCE with Transport Practice 3.4 requiring the operation to develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

Carriers

This Transport Practice does not apply to cyanide transported by sea.

Whilst Orica's product is embarked on ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of carriers used in its Supply Chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Ports

Orica has completed due diligence assessments on the ports and selects Ports with suitable infrastructure. Orica has developed emergency response guide that can be used by responsible authorities should an incident occur and Orica have a 24/7 emergency number where technical support can be obtained.

3.3.5 Transport Practice 3.5

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

	☒ **in full compliance with**	
Orica is	☐ in substantial compliance with	**Transport Practice 3.5**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Orica is in FULL COMPLIANCE with Transport Practice 3.5 requiring the operation to periodically evaluate response procedures and capabilities and revise them as needed.

Carriers

This Transport Practice does not apply to cyanide transported by sea.

Whilst Orica's product is embarked on ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of carriers used in its Supply Chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that ANL, Hamburg, Maersk, MSC, Transmares, ONE, OOCL, PIL/PAE, Swire, Toll, U&D Ocean Shipping Co. Ltd, and MLB Manfred carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Ports

Orica has completed due diligence assessments on the ports and selects Ports with suitable infrastructure and operational capabilities. Orica has developed emergency response guide that can be used by responsible authorities should an incident occur and Orica have a 24/7 emergency number where technical support can be obtained.

4.0 DUE DILIGENCE

4.1 Marine transportation

Refer to Appendix A for the full due diligence conducted on each carrier.

4.2 Ports

Refer to Appendix B for the full due diligence conducted on each port facility.

4.3 Auditor review of due diligence

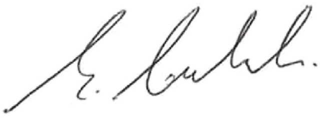
The due diligence assessments were found by the Auditor to sufficiently evaluate the carriers and port operations, within the constraints of access and limited influence, and additional management measures by the consigner were not considered necessary.

5.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled – "Important Information Relating to this Report", which is included in Appendix C 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.

Signature Page

WSP Australia Pty Ltd



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APPENDIX A

Carrier Due Diligence Assessments

ORICA GLOBAL MARINE SUPPLY CHAIN

DESKTOP DUE DILIGENCE ASSESSMENTS FOR CARRIERS

INTRODUCTION

These reports provide the results of desktop due diligence assessments completed for Carriers (Shipping Companies) included in Orica Australia Pty Ltd's (Orica) Global Marine Supply Chain in accordance with the International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold or Silver.

SCOPE AND METHOD

The scope of these desktop due diligences includes the management, interim storage, and emergency response capacity in relation to cyanide transported by a carrier on a vessel. A report is provided for each carrier listed.

As detailed in the International Cyanide Management Institute's (ICMI's) *Auditor Guidance for Use of the Cyanide Transportation Verification Protocol* (Auditor Guidance; ICMI, 2021), the following items are addressed within each assessment:

- Overview of the shipping company
- ICMC Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1 and items g-i for carriers)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1
- Conclusion
- References.

The ICMI's June 2021 version of the *Cyanide Transportation Verification Protocol* (CTVP); (ICMI, 2021), was adopted to guide the Desktop Due Diligence process. The Auditor Guidance (ICMI, 2021) was used to interpret the CTVP questions and aid in evaluating the measures taken to meet the Transportation Practices. The assessment was conducted as a desktop process using information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, General Guidance states:

> *Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1. The consignor's due diligence investigation must either be conducted or reviewed by an auditor meeting ICMI requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures.*

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1.0 AUSTRALIA NATIONAL LINE

12 January 2021

20360521-Carrier- 001. RevA

Author: Craig Currie Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Australia National Line (ANL) during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF AUSTRALIA NATIONAL LINE

Headquartered in Melbourne Australia and with regional offices and agents around the globe, ANL provides an international cargo shipping service. ANL is part of the CMA CGM Group, the third largest container shipping line in the world. The Group operates on more than 200 shipping routes with over 504 vessels, calling at 420 ports in 160 countries, and employs 37 000 staff in 755 agencies and offices around the world. In 2019, ANL and the greater CMA CGM Group transported over 21.6 million Twenty-foot Equivalent Units (TEUs) and had an annual turnover of US$30 billion – ANL's contribution was approximately 1.5 million TEUs.

ANL has an extensive range of East-West services between Asia, the Mediterranean, Indian Subcontinent and Europe and North America. In addition, they also offer comprehensive coverage in the Asia-Pacific region, providing various services around Australia and between Australia and all parts of Asia, Papua New Guinea, and New Zealand.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

ANL Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of ANL to determine when and where this occurs. ANL conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by ANL for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

ANL transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

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.

All goods classified as "hazardous" by international regulation (IMDG 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 IMDG Code requirements.

ANL has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

ANL comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and ANL is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.
- A copy of the *Form* is provided to ANL for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the ANL tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

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 Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

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.

Orica’s product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

In accordance with the International Safety Management (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.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

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 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.

CONCLUSION

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

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2.0 HAMBURG SUD		12 January 2021
		20360521-Carrier- 002. RevA
Author: Craig Currie	Approved:	Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Hamburg SUD during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF HAMBURG SUD

Operating a fleet of 177 ships, Hamburg employs 6,300 personnel around the globe. Hamburg transported a cargo volume of 4,395,000 Twenty-foot Equivalent Units (TEUs) in 2016. This consisted of dry container goods, general bulk, refrigerated cargo and dangerous goods.

Hamburg Süd examine dangerous goods transport enquiries on a case-by-case basis, to ensure compliance with statutory regulations. There are established and dedicated teams of qualified dangerous goods experts in the various business regions to assist and advise on the dangerous goods requirements. These experts are guided and monitored by a certified Dangerous Goods Safety Advisor (DGSA) and all safety and environmental requirements are met prior to transportation.

An integrated management system at Hamburg guarantees quality, environmental sustainability, and the safety of people, ships, and cargo. Since 1996, Hamburg has been certified under the ISO 9001 quality standard. The International Safety Management (ISM) Code for safe ship operation was also adopted in the same year. Hamburg expanded on these in 2000 when their environmental management system was certified under ISO 14001.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Hamburg Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Hamburg to determine when and where this occurs. Hamburg conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Hamburg for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Hamburg transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Hamburg 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.

Hamburg has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

Hamburg 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Hamburg comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and Hamburg is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the *Form* is provided to Hamburg for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the Hamburg tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Hamburg vessels have continuous means of tracking and communication during their voyages. Hamburg 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 Hamburg to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

Hamburg 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.

Orica’s product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica’s packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Hamburg 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.

Hamburg 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 Hamburg and its vessels have duly complied with.

In accordance with the ISM Code, Hamburg 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.

CONCLUSION

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

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3.0 MAERSK		12 January 2021
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Author: Craig Currie	Approved:	Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Maersk Line (Maersk) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF MAERSK

Maersk, headquartered in Copenhagen, Denmark, operates a fleet of container vessels with worldwide shipping coverage. The fleet consists of approximately 590 vessels with the capacity to handle more than 23 million Twenty-foot Equivalent Units (TEUs) globally. Maersk operates a container booking and tracking system called the Global Customer Service System (GCSS). This system is the management tool for the proper stowage and handling of dangerous goods cargo.

Maersk require companies utilising their carrier services to provide evidence that their product packaging has been approved by government regulators and tested in accordance with International Maritime Organization (IMO) Dangerous Goods (DG) Code. Maersk have the right to refuse cargo if the packaging, container and/or documentation are not satisfactory under the IMO DG Code standards.

As mentioned in the *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (April 2016), General Guidance notes, consigners are not able to conduct inspections and checks on shipping vessels due to port safety and security issues.

Maersk's vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories. Maersk also has current certificates for its vessels under the International Ship and Port Facility Security (ISPS) Code developed by the IMO.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Maersk is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers holding sodium cyanide are placed and secured on their vessels at the loading port by the port stevedoring company or service provider. As such, Maersk provide a marine carrier service and all actual handling of containers (on and off vessels) is undertaken by stevedoring companies at each port. Where a port does not have equipment to lift containers on and off the vessel, Maersk service these ports with a 'self-geared' vessel that has its own lifting devices.

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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Maersk to determine when and where this occurs. Maersk conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Maersk for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Maersk transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMO DG Code.

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Maersk requires specific dangerous goods transport documentation to accompany a consignment. This documentation includes:

- A consignor's declaration stating that the goods declared are classified and packed correctly and also a declaration from the person packing the container stating that it has been done so correctly, often combined together to as the Multimodal Dangerous Goods Form.
- 24 hr emergency telephone number and contact for shipments to/from the USA, Canada, Thailand, China, and Australia, these are mandatory, however, where possible Maersk includes for other destinations.
- Maersk also highlights that there may be other documentation required at time of booking, and these will normally be documents as prescribed by the IMDG Code but may also include specific documents required by a local authority, e.g., weathering certificate, Competent Authority Approval or Certificate of Analysis.

Maersk has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

Maersk 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Following a vessel fire that occurred in March 2018, Maersk undertook a thorough review of their safety practices and policies in the stowage of dangerous cargo. The fire did not involve cyanide, only Class 5.1 and Class 9 Dangerous Goods were determined to be involved (Transport Safety Investigation Bureau, Ministry of Transport Singapore [MOTS] 2020). The company evaluated over 3,000 United Nations (UN) numbers of hazardous materials in order to further understand and improve dangerous cargo stowage onboard container vessels and developed a new set of principles which have now been implemented across Maersk's fleet of more than 750 vessels. The Risk Based Dangerous Goods Stowage principles have also been presented to the IMO as well as the Danish Maritime Authorities.

The Risk Based Dangerous Goods Stowage principles were developed with the aim of minimising risk to crew, cargo, environment, and vessel in case a fire develops. The different container vessel designs were reviewed from a risk mitigation perspective and ultimately six different risk zones defined. Cargo covered under the IMDG Code is no longer stowed next to accommodation and main propulsion plant which is defined as the zone with the lowest risk tolerance. Similarly, risk tolerance is considered low below deck and in the middle of the vessel, whereas the risk tolerance will be higher on deck fore and aft.

Maersk complies with the requirements of the IMDG Code and its own Risk Based Dangerous Goods Stowage principles. The dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container and Maersk's GCSS (which records the UN classification, Dangerous Goods Class and that the product is a marine pollutant) ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Maersk vessels have continuous means of tracking and communication during their voyages. Maersk operates a container booking and tracking system known as the GCSS. Maersk customers are able to access live tracking data via a website or mobile phone app. Communication equipment is tested through continuous use.

Chain of custody documentation is used by Maersk to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel. In addition, Maersk operates the GCSS to allow them to identify at which phase of shipment each container is in.

All Maersk vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Maersk is required to have current certificates for its vessels under the ISPS Code developed by the IMO.

All packaging and transportation of sodium cyanide is required to be in accordance with the IMO DG Code.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Maersk has current certificates for its vessels under the ISPS Code developed by the IMO, which includes the IMDG Code (Chapter 7) and the ISM Code (Chapter 9).

The March 2018 fire did not involve cyanide product and therefore no assistance was sought from Orica. Investigation into the incident determined that only oxidising substances and miscellaneous dangerous substances and articles were present in Hold 3 of the carrier (MOTS 2020).

In the case of an incident, Maersk's Casualty Committee, which consists of key stakeholders from dedicated technical and operational areas within the A.P. Moller – Maersk Group, is called into action to ensure measures are taken to minimise environmental impacts. Drills are carried out periodically to ensure emergency procedures are up-to-date and functioning efficiently.

CONCLUSION

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

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4.0 MEDITERRANEAN SHIPPING COMPANY	15 January 2021
	20360521-Carrier-004. RevA
Author: Craig Currie	Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Mediterranean Shipping Company (MSC) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF MSC

MSC is a privately owned global organisation operating a network of over 480 offices in 155 countries, employing over 70,000 individuals.

Headquartered in Geneva, Switzerland, MSC is engaged in worldwide container transport. MSC operates approximately 550 container vessels with the capacity to handle the equivalent capacity of 21 million Twenty-foot Equivalent Units (TEUs) annually. MSC has global port coverage, operating on 200 different routes between 500 ports in 155 countries.

MSC delivers goods and services to local communities, customers, and international business partners via an integrated global network of road, rail and sea transport resources.

MSC has set up dangerous goods cargo management centres that manage the stowage of hazardous cargo worldwide through their MSC Link computer system headquartered in Antwerp. This hazardous cargo system is initiated when hazardous cargo is booked into the container booking MSC Link computer system. Specialist chemists are on-hand to ensure that chemical cargo is stowed and shipped in keeping with the necessary legal and safety requirements.

MSC's vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

MSC Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of MSC to determine when and where this occurs. MSC conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by MSC for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

MSC transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

MSC 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.

MSC has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

MSC 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

MSC comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and MSC is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the *Form* is provided to MSC for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the MSC tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

MSC vessels have continuous means of tracking and communication during their voyages. MSC 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 MSC to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

MSC has set up dangerous goods cargo management centres that control the proper stowage of hazardous cargo worldwide through their MSC Link computer system headquartered in Antwerp. This hazardous cargo system is initiated when hazardous cargo is booked into the container booking MSC Link computer system.

Vessels are registered by the Lloyd’s Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

MSC 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.

Orica’s product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

MSC 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.

CONCLUSION

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

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5.0 NAVIERRA ULTRANAV TRANSMARES		12 January 2021
		20360521-Carrier- 005. RevA
Author: Craig Currie		Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Navierra Ultranav Transmares (Transmares) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF TRANSMARES

Headquartered in Santiago, Chile, Transmares provides transport services along the west coast of South America for containerised and break-bulk cargoes. Transmares operates a fleet of container and multipurpose vessels, in sizes ranging between 5,000 and 15,000 Dry Weight Tonnes (DWT), connecting ports along the west coast of South America.

Transmares' container vessels provide regular frequented feeder services to the main container liner companies, its vessels provide the region with specialised multipurpose services between the ports of Arica, Angamos, San Antonio, San Vicente, Chacabuco, and Punta Arenas.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

Transmares Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Transmares to determine when and where this occurs. Transmares conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Transmares for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Transmares transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transmares 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.

Transmares has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

Transmares 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Transmares comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and Transmares is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.
- A copy of the *Form* is provided to Transmares for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the Transmares tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.

- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a "red line" cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Transmares vessels have continuous means of tracking and communication during their voyages. Transmares 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 Transmares to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

Transmares 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.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Transmares 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.

CONCLUSION

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

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6.0 OCEAN NETWORK EXPRESS		22 January 2021
		20360521-Carrier- 006. RevA
Author: Craig Currie		Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Ocean Network Express (ONE) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF OCEAN NETWORK EXPRESS

ONE was established on 7 July 2017 by the merging of three international shipping companies, these were K-Line Kawasaki Australia Pty Ltd (K-Line), Mitsui OSK Lines (MOL) and Nippon Yusen Kaisha (NYK Line). ONE's regional headquarters have been established in Hong Kong, Singapore, UK, USA and Brazil and services commenced in April 2018.

As a result of the integration, ONE's fleet size has a TEU capacity of 1,590,000, making ONE the sixth largest TEU carrier service in the world. Operations are conducted via a fleet of 224 vessels, including 31 large capacity ships capable of carrying up to 20,000 TEUs each. ONE's service network covers over 120 countries around the world.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

ONE Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of ONE to determine when and where this occurs. ONE conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by ONE for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

ONE may carry goods of an explosive, inflammable, radioactive, corrosive, damaging, noxious, hazardous, poisonous or any other dangerous nature only upon the acceptance of a prior written application by the Merchant for carriage of such goods. An application must accurately state the precise nature, name, label, and classification of the goods as well as the method of rendering them innocuous, with the full names, addresses and telephone numbers of the Merchant.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

ONE transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

ONE has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

ONE 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

ONE complies with the stowage and separation requirements of the IMDG Code. The ONE website states the company's commitment to complying with the international regulations governing the safe transport of dangerous goods by sea. Additionally, in Japan (parent company headquarters), the contents of the Ministry of Land, Infrastructure and Transport Act require that "sea transport and loading of dangerous goods" are in compliance with the international regulations of the IMDG Code.

ONE's operating practices state that the merchant is responsible for following the regulations of luggage, packaging and labeling, while the carrier is responsible for the loading method and stowage. ONE also refer to the IMDG Code Amendment (39-18) Book it Right and Pack it Tight – Guidance on packaging dangerous goods for carriage by sea with regards to the separation and stowage of dangerous goods on board their vessels.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

ONE vessels have continuous means of tracking and communication during their voyages. ONE 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 ONE to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

ONE 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.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

ONE may carry goods of an explosive, inflammable, radioactive, corrosive, damaging, noxious, hazardous, poisonous or any other dangerous nature only upon the acceptance of a prior written application by the Merchant for carriage of such goods. An application must accurately state the precise nature, name, label and classification of the goods as well as the method of rendering them innocuous, with the full names, addresses and telephone numbers of the Merchant.

CONCLUSION

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

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Golder Associates (2020). International Cyanide Management Code Production Verification Audit. Orica Australia Pty Ltd Yarwun Production Facility Detailed Audit Report. Reference number 19135110-004-R-Rev0

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7.0	ORIENT OVERSEAS CONTAINER LINE	15 January 2021
		20360521-Carrier- 007. RevA
Author: Craig Currie		Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Orient Overseas Container Line (OOCL) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF OOCL

Orient Overseas Container Line and OOCL are the trade names for transportation services provided separately by Orient Overseas Container Line Limited (OOCLL) and OOCL (Europe) Limited respectively, both are subsidiaries of Orient Overseas (International) Limited, a public company listed on the Hong Kong Stock Exchange.

OOCL is one of the world's largest integrated international container transportation, logistics and terminal operator companies. As one of Hong Kong's most recognized global brands, OOCL provides customers with an integrated logistics and containerised transportation services, with a network that encompasses Asia, Europe, North America, and Australasia.

OOCL is one of the leading international carriers serving China, providing a full range of logistics and transportation services throughout the country. It is also an industry leader in the use of information technology and e-commerce to manage the entire cargo and supply chain process.

Dangerous Goods Coordinators are available to offer shippers all the regional advice that is required. A shipper's or customer's dangerous goods cargo is checked promptly and accurately. Legal requirements concerning all the countries and ports related to transport are taken into account. In addition, OOCL ensures safe transport by observing the relevant stowage and segregation requirements of dangerous goods based on international standards.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

OOCL Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of OOCL to determine when and where this occurs. OOCL conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by OOCL for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

OOCL transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

OOCL 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.

OOCL has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

OOCL 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

OOCL's Dangerous Goods System has a training system, known as "DG *Smart,*" which covers parties involved in DG transportation processes including carriers, forwarders, manufactures, port authorities, and DG/chemical experts. Each party provides certain information and performs functions that are shared and followed up and cross-checked by relevant department leads.

OOCL comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and OOCL is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.
- A copy of the *Form* is provided to OOCL for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the OOCL tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a "red line" cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

OOCL vessels have continuous means of tracking and communication during their voyages. OOCL 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 OOCL to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

OOCL 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.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

OOCL 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.

CONCLUSION

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

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8.0 PACIFIC INTERNATIONAL LINES (PACIFIC ASIA EXPRESS)

12 January 2021

20360521-Carrier- 008. RevA

Author: Craig Currie Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Pacific International Lines / Pacific Asia Express (PIL PAE) during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF PIL PAE

PAE is a subsidiary company of Pacific International Lines (PIL) and has represented PIL across Australia since 1990. PAE boasts national coverage around Australia with fully owned offices in all the Australian major ports as well as Darwin, Townsville, Launceston, and Mildura.

PIL PAE is a Singapore based, private company currently ranked 14th amongst the top container ship operators in the world, offering container liner and multi-purpose cargo services at over 500 locations, in 100 countries worldwide and employing over 18,000 personnel.

PIL PAE currently operate a fleet of over 190 container vessels and specialises in the global transportation of general container and reefer cargo, specialist transport equipment, break bulk and dangerous goods.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide take by Orica into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

PIL PAE Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of PIL PAE to determine when and where this occurs. PIL PAE conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by PIL PAE for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

PIL PAE 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.

PIL PAE has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

PIL PAE 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

PIL PAE comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and PAE is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the *Form* is provided to PAE for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the PAE tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

PIL PAE vessels have continuous means of tracking and communication during their voyages. PIL PAE 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 PIL PAE to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

PIL PAE 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.

Orica’s product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica’s packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with an emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

All sodium cyanide remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

PIL PAE 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.

The International Safety Management (ISM) Code provides an international standard for the safe management and operation of ships, and for pollution prevention, which PIL PAE and its vessels have duly complied with. The ISM Code requires PIL PAE to develop, implement and maintain a SMS in relation to the ISM Code. PIL PAE's SMS include, among other things:

A safety and environmental protection policy, instructions, and procedures to ensure safe operation of the ships and protection of the environment in compliance with the relevant international and flag state legislation; procedures for reporting accidents, or to prepare for and respond to emergency situations; and procedures for external and internal audits and management reviews.

Each of the Company's vessels has also been issued a Safety Management Certificate (SMC) under the approved Classification Society of Nippon Kaiji Kyokai (NKK) or Lloyd's Register (LR), certifying that the SMS of the ship has been audited and that it complies with the requirements of the ISM Code.

CONCLUSION

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

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9.0 SWIRE

12 January 2021

20360521-Carrier- 009. RevA

Author: Craig Currie Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Swire during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF SWIRE

Swire is headquartered in Singapore, where, through three business divisions, Swire Shipping, Swire Bulk and Swire Projects, they own and operate over 150 carrier vessels. Swire offer multipurpose liner services for the transportation of containerised, breakbulk, heavylift and project cargoes in addition to providing dry bulk and bulk logistics services globally. With over 2,500 onshore and seafaring staff globally, Swire trade in more than 90 countries and have offices in 18 countries. As the liner shipping division of The China Navigation Company (CNCo), Swire Shipping provides high frequency liner shipping services in the Asia Pacific markets and provides a wide range of customer solutions for project, heavy lift, refrigerated, breakbulk and mini bulk cargoes. 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.

With more than 145 years of experience, Swire Shipping connects up to 400 ports via a network of services in the Asia-Pacific region.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Swire Shipping 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Swire to determine when and where this occurs. Swire conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Swire for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Swire transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

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.

Swire has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Swire comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and Swire is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the *Form* is provided to Swire for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the Swire tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

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 Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

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.

Orica’s product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica’s packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

All sodium cyanide remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

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.

CONCLUSION

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

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10.0 TOLL SHIPPING

12 January 2021

20360521-Carrier- 010. RevA

Author: Craig Currie

Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of Toll Shipping during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (June 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF TOLL

Headquartered in Melbourne, Australia and with regional offices and agents around the globe, Toll provides an international multimodal transportation service. Toll has a strong Asia Pacific focus though operates a network of sites throughout the world including Africa, the Middle East, Americas, and Europe. The Toll Group employs approximately 10,000 people at 600 freight, warehouse/logistics, aviation, marine and or support facilities throughout its global network.

Toll provides supply chain solutions and transport logistics for a range of industries and also work in partnership with niche service providers to offer specialised services such as metals logistics, aviation fuel logistics and dangerous goods management. With a fleet of approximately 13,000 units of varied size (containers, ships, vessels, and aeroplanes) operating across the Asia Pacific region alone, Toll is able to transport a variety of bulk product for customers in the mining, resources, construction, infrastructure and agricultural sectors.

The Toll Group have specialised vehicles and specialist trained personnel, enabling them to transport all nine classes of dangerous goods, complying with the regional, national, and international regulatory schemes applicable in the communities in which they operate.

Toll Shipping holds the following accreditations:

- ISO 9001:2008 Quality management systems

- International Safety Management (ISM)
- International Ship & Port Facility Security (ISPS)
- National Self Insurer OH&S
- Mass Management for Victoria and Tasmania, Australia.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

Toll 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Toll to determine when and where this occurs. Toll conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Toll for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure "Carrier Assessment" (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Toll transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the Port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Toll 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.

Toll has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and those containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

Toll 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Toll comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica and Toll is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.
- A copy of the *Form* is provided to Toll for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the Toll Online tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a “red line” cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Toll vessels have continuous means of tracking and communication during their voyages. Communication equipment is tested through continuous use.

Toll has their own in-house tracking system, known as Toll Online, for tracking freight via the container and Bill of Lading (BOL) numbers.

Toll Online is an integrated freight processing tool, it provides access to freight management data for precise tracking of consignments including:

- track and trace data
- POD (Proof of Delivery) data
- consignment entry with label and manifest printing
- event and POD subscriptions
- depot management and returns
- issue management
- arrivals search

- transfers.

Toll provide item-level freight tracking, radio frequency identification (RFID) and mobile technologies, and other tools to ensure that a product's freight journey is completed in a transparent and efficient manner.

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

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

Toll 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.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

In accordance with the International Safety Management (ISM) Code, Toll 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.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Toll 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.

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

In accordance with the ISM Code, Toll 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.

CONCLUSION

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

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11.0 U&D OCEAN SHIPPING CO. LTD		22 November 2022
		20360521-Carrier- 011. RevA
Author: Sonam Wangchuk	Approved:	Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of U&D Ocean Shipping Co. Ltd during November 2022 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI, 2022), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021, was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF U&D OCEAN SHIPPING CO. LTD

U&D Ocean Shipping Co. Ltd is a Hong Kong company and has been operating for approximately two-years. The Draco Faith vessel is owned and operated by U&D Ocean Shipping Co. Ltd (Marine Man Ship Management, 2021). The Draco Faith (IMO number 9574377, and Maritime Mobile Service Identity (MMSI) 355760000) has a carrying capacity of 9,023 t (dry weight) and/or up to 630 Twenty-foot Equivalent Units (TEU). The vessel was built by the Dongfeng Ship Industry, Chongqing, China (Balticshipping, 2022).

The Draco Faith is considered a generalised dry cargo carrying vessel, equipped with container carrying capacity, it was built in 2010. The Draco Faith sails under the flag of Panama with the classifications of CSA5/5, general dry cargo, ice class B-CSM, MCC. The dimensions of the vessel are 122 m long, and 19.8 m wide. The vessel has a total hold/tank capacity of 13,350 CBM.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The Draco Faith, operating under U&D Ocean Shipping Co. Ltd provides a carrier service for the international shipping of containerised cargo. Shipping containers holding solid sodium cyanide are placed and secured on the Draco Faith at the loading port 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of U&D Ocean Shipping to determine when and where this occurs. U&D Ocean Shipping Co. Ltd, and the Draco Faith, conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by U&D Ocean Shipping Co. Ltd for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

The Draco Faith is used to transport containerised cargo, by sea, to various destination ports. All packaging and transportation are in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the Port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

U&D Ocean Shipping Co. Ltd comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.
- A copy of the *Form* is provided for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into an online tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the *Form* to be provided between 48 and 24 hours prior to cut-off.
- Sodium cyanide is designated a "red line" cargo and is only loaded to the vessel when called in.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The vessels have continuous means of tracking and communication during their voyages. Communication equipment is tested through continuous use. The vessel can also be tracked using various online marine vessel tracking services, which update the approximate location of the vessel during the transport.

Additionally, chain of custody documentation is used to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within TEU, a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

In accordance with the International Safety Management (ISM) Code, U&D Ocean Shipping Co. Ltd 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.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The Panama Canal Authority has developed and implemented the Panama Canal Ship Oil Pollution Emergency Plan (PCSOPEP) which became effective in January 2005. Under this plan, all vessels reporting to ports within Panama are required to present an emergency response plan developed in accordance with the requirements of IMO regulations and must include information on a level of response capabilities, emergency response and spill containment equipment and other oil pollution, or hazardous substances, prevention measures and spill notification procedures (ACP, 2011).

CONCLUSION

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

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12.0 LANGEOOG, MLB MANFRED

22 Nov 2022

20360521-Carrier- 012. RevA

Author: Sonam Wangchuk

Approved: Mike Woods

CARRIER DUE DILIGENCE EXECUTIVE SUMMARY

Golder conducted a due diligence of MLB Manfred Lauterjung Befrachtung GmbH & Co. KG (MLB Manfred) Shipping during January 2021 on behalf of Orica.

The assessment was reviewed by Mike Woods who meets the ICMI requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI, 2022), were addressed within the due diligence:

- 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.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF MLB MANFRED

Founded in 1979, MLB Manfred operates a fleet of approximately 40 vessels. The fleet portfolio ranges from coasters and bulk carriers to container vessels, car carriers and multi-purpose tween decker. Servicing traditional global sea routes, the full fleet is trackable and supervised constantly (MLB, n.d.).

The Langeoog, bearing IMO number 9506136 and Maritime Mobile Service Identity (MMSI) number 305973000 is a general cargo carrier built in the year 2013 by Daoda Heavy Industry, Qidong, China. The Langeoog operates under the flag of Antigua and Barbuda and is owned by MLB Manfred. The overall length and width of the vessel is approximately 108 m by 17 m respectively. The carrying capacity of the Langeoog is 5,463 t (dry weight) (Marine Traffic, 2022).

The vessel is a multi-purpose cargo carrier fitted with tween decks and grain bulkheads, there are two hydraulic single boom cranes (rated at 60 t and 45 t), and the total permissible load includes:

- Tanktop – 2,000 t/sq m
- Tween deck hatch – 250 t/sq m
- Weather deck hatch – 200 t/Sq m.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The Langeoog, as operated by MLB Manfred, 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 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).

In some instances, sodium cyanide shipments are unloaded at terminals en route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of MLB Manfred to determine when and where this occurs. MLB Manfred conducts itself in accordance with the International Maritime Organization (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by MLB Manfred for trans-shipping.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

Orica prepares a dangerous goods transport document known as the *Multimodal Dangerous Goods Form*. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship's master provides the Port with a copy of the *Multimodal Dangerous Goods Form*.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

MLB Manfred 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.

MLB Manfred has multiple cross-checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The *Multimodal Dangerous Goods Form* also includes emergency response information.

MLB Manfred 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.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

MLB Manfred comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The *Multimodal Dangerous Goods Form* used by Orica is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the *Form* is provided for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the *Form*, data is entered into the MLB Manfred online tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.
- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time.
- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

MLB Manfred vessels have continuous means of tracking and communication during their voyages. Communication equipment is tested through continuous use.

MLB Manfred provide item-level freight tracking, radio frequency identification (RFID) and mobile technologies, and other tools to ensure that a product's freight journey is completed in a transparent and efficient manner.

Additionally, chain of custody documentation is used to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

Port 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.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isotainers or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general-purpose shipping container. Bulk sparge isotainers are rated for sea transportation and inspected by Bureau Veritas under the 2.5- and 5-year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-30596/7020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).

Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Port 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.

MLB Manfred operates in compliance with the ISM Code which provides an international standard for the safe management and operation of ships, and for pollution prevention.

In accordance with the ISM Code, MLB Manfred 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.

CONCLUSION

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

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APPENDIX B

Port Due Diligence Assessments

ORICA GLOBAL MARINE SUPPLY CHAIN

DESKTOP DUE DILIGENCE ASSESSMENTS FOR PORTS

INTRODUCTION

These reports provide the results of desktop due diligence assessments completed for ports included in Orica Australia Pty Ltd.'s (Orica) Global Marine Supply Chain in accordance with the International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold or Silver.

SCOPE AND METHOD

The scope of these desktop due diligences includes the management, interim storage, and emergency response capacity in relation to cyanide transported through the port. A report is provided for each port listed.

As detailed in the International Cyanide Management Institute's (ICMI's) *Auditor Guidance for Use of the Cyanide Transportation Verification Protocol* (Auditor Guidance; ICMI, 2021), the following items are addressed within each assessment:

- Overview of the port facility
- International Cyanide Management Code (ICMC) Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1
- Conclusion
- References.

The ICMI's June 2021 version of the *Cyanide Transportation Verification Protocol* (CTPV Protocol; ICMI, 2021), was adopted to guide the Desktop Due Diligence process. The Auditor Guidance (ICMI, 2021) was used to interpret the CTPV Protocol questions and aid in evaluating the measures taken to meet the Transportation Practices. The assessment was conducted as a desktop process using information obtained from previous due diligence reviews, ICMI audit reports, and publicly available online information.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, General Guidance states:

> *Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1. The consignor's due diligence investigation must either be conducted or reviewed by an auditor meeting ICMI requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures.*

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1.0	PORT OF ABIDJAN, CÔTE D'IVOIRE		21 October 2020
			20360521-port- 001. RevA
Author:	Sara Pritchard	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Abidjan, Côte d'Ivoire during October 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of the port for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF ABIDJAN

The port of Abidjan is located on the Côte d'Ivoire (Ivory Coast) in West Africa and is considered as one of the largest, most modern, and equipped ports of West Africa. The port of Abidjan is located on the Ébrié Lagoon and is connected to the Gulf of Guinea and Atlantic Ocean by the Vridi Plage sandbar, a buoyed channel 2.8 km in length and 13.0 m deep. The port is the economical capital and main port of Côte d'Ivoire, with a central location and well-developed infrastructure, it is a major point for transhipments into West and Central Africa over the Côte d'Ivoire's network of rail and road systems. Since the opening of the Vridi Canal in 1950, the port of Abidjan has handled nearly all commercial trade for the Côte d'Ivoire (OMA Group 2020, internet site).

The port of Abidjan has a total quay length of up to 6 km and there are 34 berths dedicated for general cargo, timber, cereals, fruits, petroleum products and containers. The port can accommodate vessels up to 260 m in length, depth at the harbor's mouth is 10.5 m, and the depth at the quay is 12.5 m. The port provides around 408,000 m^2 of open storage and 144 m^2 of covered warehouses and sheds. Three berths specialise in container-handling, and one berth is dedicated to roll-on/roll-off cargoes (port Autonome D'Abidjan 2020, internet site).

On 5 October 2020, Bolloré ports, APN Terminals and the Côte d'Ivoire government launched construction works on the Côte d'Ivoire Terminal, the second container terminal at the port of Abidjan. The Terminal construction work is scheduled for 18 months and will consist of surfacing and developing the reclaimed land and connecting the Abidjan railway network. This will be followed by the construction of the buildings and the acquisition of equipment. The new container terminal will provide up to 375,000 m^2 of additional storage and will be able to process over 1.5 million TEU containers a year. It will also allow ships with a draught of 16 m on 1,100 metres of wharves (Bolloré ports 2020, internet site).

The port of Abidjan is certified with ISO 9001:2008 (quality), ISO 14001:2004 (environment) and OHSAS 18001:2007 (health and security) (Bolloré ports 2020, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots and tugboats, management of different weather conditions, tides, currents and safety and general port operations), which support the safe docking and turnaround of vessels in and out of the port.
- Entry into the port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessels to the port will consider channels, special navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

The stevedoring company (Bolloré Africa Logistics) manage the onshore (wharf) operations at the port of Abidjan container terminal which is currently used by other ICMI accredited transporters to facilitate the unloading of vessels. Stevedoring operations include:

- Handling of containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles, and collecting and/or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers originates from the vessel's manifest.
- Sodium cyanide containers are loaded directly onto trailers via gantry cranes, owned and maintained by Bolloré Africa Logistics' Transport Division, for direct delivery out of the port under controlled convoys to the end use destination in Côte d'Ivoire.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Abidjan is West Africa's largest, most modern port. With a central location and a well-developed infrastructure, it is a major point for transhipments into West and Central Africa over the Côte d'Ivoire 's network of rail and road systems (OMA Group 2020, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Côte d'Ivoire is an IMO Member State (1960) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1987) (SOLAS 2020, internet site), thereby requiring the port of Abidjan to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Harbour Master organises ship movements, tracks pilotage operations, and supervises terminal operations via the port Control Tower and real-time closed-circuit television (CCTV) monitoring. Container terminal software allows for the controlled tracking and placement of containers when removed from the vessel.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets.

The port of Abidjan requires documentation such as Request for Removal forms, Original Bill of Landing, cargo manifests, and the original handler's voucher for removal of dangerous goods containers off vessels, and subsequent transhipments (port Autonome D'Abidjan 2020, internet site).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Port and vessel security is managed through the International Ship and port Facility Security Code (ISPS Code), awarded to the port of Abidjan in 2004. The ISPS Code is a comprehensive set of measures aimed to enhance security of ships and port facilities.

The port of Abidjan is also certified under OHSAS 18001:2007 (health and security) (Bolloré ports 2020, internet site). There are regular security patrols, restricted points of access, video surveillance and the capability to call upon certain specialised State Defence and Security Forces.

When containers of dangerous goods cannot be placed directly onto onwards transportation, they are sent to a secure holding facility under escort of the port Autonome d'Abidjan. All handling of dangerous goods, on and off vessels, must have prior authorisation by the Harbour Master who sets the timeframes that such handling may take place.

Cyanide product remains in the containers that were packed at the Production Facility. The packaging has a sealed plastic liner which stops the contact of product with moisture or humidity. The Intermediate Bulk Containers (IBCs) holding cyanide are stored within shipping containers that are transferred from vessel to trailer and moved to a designated dangerous goods storage area within the terminal confines. Containers are placed in an open-air environment to prevent the build-up of hydrogen cyanide gas.

There are general dangerous goods warning signs throughout the port.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Côte d'Ivoire has been a Member State of the IMO Council since 1960 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018).

The port of Abidjan is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

The Ivorian Anti-Pollution Centre (CIAPOL) is the responsible authority for marine pollution in the Ivory Coast. CIAPOL, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (ITOPF 2020, internet site).

The Stevedoring service provider (Bolloré Africa Logistics) has developed a sodium cyanide emergency procedure. They also provide emergency response including a mobile bund for containing spillage from a shipping container. In the event of an emergency, the port of Abidjan has a port Response Unit (Unité d'Intervention portuaire), composed of officers from the fire service or the navy fire department, who are on hand and ready to respond 24 hours a day (port Autonome D'Abidjan 2020, internet site).

CONCLUSION

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

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2.0	PORT OF AUCKLAND, NEW ZEALAND		22 October 2020
			20360521-port- 002. RevA
Author:	Sara Pritchard	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Auckland, New Zealand during October 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF AUCKLAND

The port of Auckland, New Zealand is located next to Auckland's central business district. The port is configured into two main terminals, the Multi-Purpose Bledisloe Terminal and the Fergusson Container Terminal. Ports of Auckland Limited (POAL) manages the 17 berths and eight wharfs, with cargo-handling services provided by third-party stevedoring companies (POAL 2020a, internet site). A vital link in the inland transport and logistics chain, the port of Auckland offers four parallel rail lines – each 500 m long which can accommodate 128 rail wagons at a time for the loading and discharge of sea containers (POAL 2017). The rail exchange connects the port of Auckland with inland freight hubs.

Auckland Harbour Control schedules commercial movements around the harbour to coordinate adequate resources for each movement. It has an advisory role for providing information to ships and other craft entering the harbour limits. The port uses the Transas Navi-Harbour system in conjunction with an Automated Identification System (AIS) to keep track of the movements of all ships as they travel between Cape Reinga and Tauranga (POAL 2020b).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots and tugboats, management of different weather conditions, tides, currents and safety and general port operations), which support the safe docking and turnaround of vessels in and out of the port.
- Entry into the port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessels to the port will consider channels, special navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of dangerous goods discharged by vessels at the container terminal are assigned a Land and Remove Time (L&R) by the port of Auckland's checking system. Sodium cyanide has an L&R time of 72 hours, requiring it be landed and removed from the port within this timeframe. The port uses a charging system for dangerous goods to encourage containers to be collected within the allowable timeframe (POAL 2020c).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Auckland can complete turn-around of ships in a matter of hours. The port is connected via rail to a network of inland freight hubs (Wiri, Mt Maunganui, Longburn, and Northgate) which provide further rail and road transportation linkages for industry users. These hubs all operate as an open platform, available to all stakeholders in the supply chain and offering regional importers and exporters a seamless, flexible service to overseas markets (POAL 2020d, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

New Zealand is both an IMO Member State (1960) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1990) (SOLAS 2020, internet site), thereby requiring the port of Auckland to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and SOLAS Convention ((1974) Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port of Auckland has policies and measures in place that comply with the International Ship and port Facility Security (ISPS) Code (POAL 2020e, internet site). The port is compliant with legislation local to New Zealand under the *Maritime Security Act 2004* (POAL 2020e, internet site; Ministry of Transport 2018). Auckland Harbour Control organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring (POAL 2020b).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Auckland has a statutory obligation to comply with, amongst others, the security requirements of the *port's New Zealand Customs (NZC) Procedure Statement*, the *Customs and Excise Act 1996* (New Zealand Customs Service 1996) and the *Maritime Security Act 2004* (Ministry of Transport 2018). The primary provisions being laid out in the ISPS Code, particularly *Part 2 Ship and port Facility Security, Subsection 40 – port Facility Security Plans* and *Part 3 Preventative Security Measures, Subsection 46 – Restrictions with Respect to port Security Areas* (POAL 2020e, internet site).

For the import of dangerous goods, the port enforces either a Direct to Motor Vehicle (DMV) or L&R process. Allowable dwell times are specified based on dangerous goods class and UN numbers; the dwell time commences from the time the container is discharged onto the wharf. The sodium cyanide allowable dwell time is 72 hours (POAL 2020c, internet site).

The *Hazardous Substances and New Organisms Act 1996* (HSNO Act) (Ministry for the Environment 2017) and its associated *Codes of Practice - HSNOCOP-16, HSNOCOP-28* and *HSNOCOP-2* ensure that cyanide is stored securely and with adequate ventilation.

The port of Auckland has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. All sodium cyanide always remains packaged within its sealed container preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

New Zealand has been a member State of the IMO Council since 1960, it complies with the requirements of the IMDG Code.

The Maritime New Zealand (MNZ) is the competent authority and has responsibility for all forms of marine emergencies, including administering the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments (MNZ 2020, internet site).

The port of Auckland is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training, and exercises.

Code of Practice *HSNOCOP-36 Preparing for a Chemical Emergency* also provides a comprehensive guide to emergency management suitable for use by businesses and facilities engaged in the storage, transport, use and handling of chemicals and hazardous substances.

CONCLUSION

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

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3.0 PORT OF BRISBANE, AUSTRALIA

23 October 2020

20360521-port- 003. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Brisbane, Australia during October 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BRISBANE

The port of Brisbane is one of Australia's fastest growing multi-cargo ports handling over $50 billion annually of international freight; equivalent to over 15% of Queensland's Gross State Product (port of Brisbane Pty Ltd [PBPL] 2020a, internet site). Located at the mouth of the Brisbane River, the port of Brisbane is managed and developed by PBPL under a 99-year lease from the Queensland Government. PBPL is responsible for developing and maintaining port infrastructure and facilities, and for the provision of key services including maintaining navigable access to the port for commercial shipping, and the operation of the Brisbane Multimodal Terminal (BMT). The BMT is the interface between rail, road, and the container terminals at the port of Brisbane (PBPL 2020a, internet site).

Between the port of Brisbane and its upriver facilities there are a total of 29 operating berths and more than 8,200 m of quayline. The port of Brisbane has nine dedicated container berths, which are leased and operated by three stevedores – Patrick, DP World and Brisbane Container Terminals – all of which use automated container handling equipment. DP World Brisbane leases and operates Berths 4-7, Patrick leases and operates Berths 8-10 and Brisbane Container Terminals occupies Berth 11 and 12 (PBPL 2020b, internet site).

Port operations include:

- Port protocols and procedures are in place for docking of vessels at the port (e.g., use of Pilots and tugboats, management of weather conditions, tides, currents and safety, and general operations of the port). This sees to the safe docking and turnaround of vessels in and out of the port.
- Port entry is controlled by the Pilot who understands the port protocols and any unique issues regarding the approach and docking of vessels at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of a vessel to the port will consider channels, navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Other port operations, including stevedoring and towage, are carried out by private operators who lease land from PBPL. Vessel traffic services are the responsibility of the Queensland Department of Transport and Main Roads, and pilotage services are carried out by a private operator (PBPL 2020a, internet site).

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

PBPL is responsible for the management of dangerous goods in the port, including the loading and unloading of ships alongside and movement across the wharf. Vessel Traffic Services (VTS) is responsible for monitoring and managing the safe movement of ships in Queensland waters. VTS will assist the port authority in controlling traffic movement in the port, maintaining on/water safety distances, and responding to emergency situations.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Brisbane's strategic location offers an efficient entry to market through direct connectivity to Australia's major road and rail networks PBPL 2020a, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Australia is an IMO Member State (1952) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port of Brisbane to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Maritime Safety Queensland (MSQ), through the authority of the Harbour Master, has jurisdiction over the safe movement of all shipping within the pilotage area. The scheduling of ship movements is initiated by the agent submitting movement details for a vessel to Brisbane VTS Centre via the QSHIPS ship planning programme.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Section 10 (Dangerous Cargo) of the *port Procedures and Information for Shipping, port of Brisbane* (MSQ 2020) outlines the duties of owners and masters of vessels in relation to the *Marine Order 41 – Carriage of Dangerous Goods* (Australian Maritime Safety Authority [AMSA] 2020a, internet site).

Division 13 of the Transport Operations (Marine Safety) Regulation 2004 outlines the duties of owners and masters of vessels in relation to the carriage of dangerous goods. The regulations require that ships carrying dangerous goods and bulk liquids must comply with the appropriate directions of the IMDG code (IMO 2018) and Australian Standard (AS) 3846-2005 *The Handling and Transport of Dangerous Cargoes in port Areas* (Standards Australia 2005) and are to notify PBPL and VTS of the intent to bring dangerous cargo into or depart from a pilotage area.

Ships have to report the information, namely the arrival and/or departure of the ship, the removal of the ship to another berth or anchorage, the transfer of the cargo to another ship the loading of the cargo, and the details of the cargo in an approved form. In the port of Brisbane agents/masters are to submit dangerous goods information electronically to the PBPL through the 'DGTrack' system.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Sodium cyanide transited through the port of Brisbane is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. All sodium cyanide transited through the port of Brisbane remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

PBPL is responsible for the security and protection of the port's infrastructure and assets, and the provision of risk-based security services.

In general, port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities, regulated by the *Maritime Transport and Offshore Facilities Security Act, 2003* (MTOFSA) (Australian Government 2012). The port of Brisbane is a security regulated port as specified in the MTOFSA (PBPL 2020c, internet site).

In addition to PBPL's maritime security plan, security regulated ships, port facilities and port service providers also have maritime security plans which outline the measures and procedures undertaken to protect vessels that trade in Australian seaports and the port infrastructure that services those vessels.

Port security officers conduct mobile patrols on both land and water. All persons wishing to access the port must be able, when requested, to demonstrate they have official business in the port. All crew members leaving a security controlled berth/terminal must show appropriate identification for example, a seafarer's book or a copy of their passport in order to gain re-entry. All visitors and service providers to vessels must be included on the agent's list of authorised visitors and must be able to provide proof of identity. Port access by members of the public is prohibited.

Several cameras are stationed around the port to assist security officers monitoring the operations. It is an offence to enter or leave the port area by any means other than a designated entrance or exit (MSQ 2020).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Brisbane is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises.

AMSA, a federal government self-funded maritime safety agency established in 1990, is responsible for providing a national response capability for marine pollution. AMSA administers the *National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances*, a cooperative arrangement between the Federal, State and Territory Governments and the shipping, oil, exploration and chemical industries, emergency services and fire brigades.

Under National Plan arrangements, a wide strategic range of response equipment is held at nine regional stockpiles. Equipment provided by AMSA is generally targeted at larger spills, though this is complemented by equipment held by port authorities, State Governments and individual oil and chemical companies.

Section 12 (Emergency Management) of the *port Procedures and Information for Shipping, Port of Brisbane* (MSQ 2020) provides guidance to the port community about initial response procedures to dangerous incidents, emergencies, terrorist acts and disasters.

On 2 December 2020 an incident involving the release of solid sodium cyanide product occurred at the port. Two shipping containers were damaged in the incident and sodium cyanide solids were spilt on to the concrete wharf and into the hold of the vessel. There was no release to the environment and no cyanide exposure resulting in medical intervention reported.

Queensland Fire and Emergency Services (QFES) were promptly on the scene, supported by Queensland Police and QFES appointed scientists. QFES is the responsible authority for HAZMAT incidents in Queensland and took control of the scene. An exclusion zone was established as a precaution and the spill was cleaned up by QFES with no requirement for ongoing monitoring or management.

The damaged containers were patched and wrapped on wharf to prevent further loss and transported off wharf to a secure major hazard facility for further assessment.

Orica were contacted by the responders and provided technical support and advice as subject matter experts and the consigner of the goods in accordance with their response plan.

CONCLUSION

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

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4.0 PORT OF BUENAVENTURA, COLOMBIA

13 November 2020

20360521-port- 004. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Buenaventura, Colombia during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BUENAVENTURA

The port of Buenaventura is the main port of Colombia in the Pacific Ocean, accounting for nearly 60% of all Colombian sea imports and exports. The nearest city to the port is Buenaventura, located approximately 5 km to the south east.

The Sociedad portuaria Regional de Buenaventura S.A. (Regional port Society of Buenaventura; SPRB) is the port authority (port Authority) for the port of Buenaventura (SPRB 2020).

The port of Buenaventura has specialised infrastructure for container handling, grain, bulk, and multipurpose cargo. It has 14 berths, 12 operated by Society of Buenaventura and 2 under another concession. The port is a multimodal transport port with an access channel length of 31.5 km (17 Nautical miles). The outside bay depth is 9.1 m at low tide (Zero Equal) and the inside bay depth is 12 m at low tide (equal zero). The cargo pier has a depth of 9.4-10 m. The port has a dock length of 2 km (Logcluster 2020).

The port of Buenaventura has a specialised container terminal (Buenaventura SA - TECSA). Key handling equipment at the port includes two 50 million tonne (MT) and two 60 MT dockside cranes, six container gantries (40 to 62 MT) located on Post-Panamax shore rails, three multipurpose mobile cranes (100 and 104 MT), 16 reach stackers (40 and 30 MT), and 10 forklifts with different capacities for handling containers (Logcluster 2020).

The container facilities at the port consists of a 40 m long quay, which allows for berthing of two large vessels simultaneously or a Panama Vessel, with a draft depth of approximately 14 m during minimal tide. The port's container facilities are equipped to attend up to 260,000 twenty-foot equivalent units (TEUs) per year. The container facilities at the port have approximately 19 hectares (ha) for container storage with a capacity to store up to 8,000 TEU simultaneously (Logcluster 2020).

Stevedoring operations at the port of Buenaventura are conducted by private companies and are classified and regulated by the national government.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Buenaventura is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security, and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port Authority organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Buenaventura uses an Access Control System to monitor if the persons entering the port are appropriately identified and to minimise unauthorised access. The Access Control System uses 62 biometric readers, 18 full body and half-body rotating stands, and 23 security fences at vehicle access points which are controlled by a centralised server (Logcluster 2020).

The port also implements a Perimeter Control System in order to prevent intruders' access through the outside perimeters of the port facilities. The system consists of 4.8 km of sensor cable controlled by 23 processors that interpret the signals received, and then transmit information to the control centre.

The port of Buenaventura has CCTV to monitor and record all port operations and activities. It has 370 fixed and panning cameras distributed throughout the port and 21 digital recorders to store security events 24 hours/day. The system also includes special equipment for monitoring the internal navigation channel under varying visibility conditions.

The port has armed security personnel, consisting of approximately 265-armed security guards and 6 patrol units, by land and sea (Logcluster 2020).

All international maritime regulations [International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78)] in relation to hydrocarbons, segregation and control of dangerous goods must be complied with at the port of Buenaventura (SPRB 2020).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Colombia has been a Member State of the IMO Council since 1974 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018).

The port of Buenaventura is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

CONCLUSION

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

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5.0 PORT OF BUENOS AIRES, ARGENTINA

13 November 2020

20360521-port- 005. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Buenos Aires, Argentina during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BUENOS AIRES

The port of Buenos Aires is located in Puerto Nuevo (New port), Buenos Aires in Argentina. It is operated by the General ports Administration, a state enterprise, and it is the leading transhipment point for foreign trade in Argentina.

Terminales Río de la Plata (TRP) operates Terminals 1, 2, and 3 in Puerto Nuevo in Buenos Aires. The terminals have been remodelled to provide modern facilities and the latest in container-handling equipment and services. The two facilities make up the largest container terminal in the port, with capacity for handling one million 20-foot equivalent units (TEUs) of containerised cargo per year.

The port facility comprises three basins, providing up to five berths for vessel operations. The terminal handles deep-sea vessels from Europe, Asia, and North America, as well as feeders to both the East and West Coast of South America and barges upriver to Rosario.

TRP has an integrated management system which is certified against international standards for quality (ISO 9001:2008), environment (ISO 14001:2004) and security for the supply chain (ISO 28000:2007).

Port operations include:

- A Harbor Master oversees the overall operation of the port of Buenos Aires.
- Port protocols and procedures are in place for docking of vessels at the port (e.g., use of Pilots and tugboats, management of weather conditions, tides, currents and safety, and general operations of the port). This sees to the safe docking and turnaround of vessels in and out of the port.
- Port entry is controlled by the Pilot who understands the port protocols and any unique issues regarding the approach and docking of vessels at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of a vessel to the port will consider channels, navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Stevedoring operations include:

- The stevedoring company, TRP, manage the onshore (wharf) operations at the dedicated container terminal. This is the terminal currently used by other ICMI accredited transporters to facilitate the unloading of their vessels.
- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of dangerous goods discharged by vessels at the container terminal are currently being moved by TRP to various areas within the port for storage until customs clearance has been completed and transport is arranged. Containers of cyanide are segregated from other classes of dangerous goods. TRP are currently investigating the possibility of having a dedicated area for storage of all dangerous goods. This area will have minimal traffic flow and be large enough to allow space for appropriate segregation of different classes of dangerous goods.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Buenos Aires is the leading transhipment point for foreign trade into Argentina. The terminal handles deep-sea vessels from Europe, Asia, and North America, as well as being strategically placed to serve as a freight linkage to and from the East and West Coast of South America.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Argentina is both an IMO Member State (1953) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1979) (SOLAS 2020, internet site), thereby requiring the port of Buenos Aires to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and SOLAS Convention ((1974) Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities. The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures.

The port of Buenos Aires operates under a suite of International and National regulations that ensures its compliance with regards to the handling and storage of dangerous goods. PNA Regulations No. 9/97 Transport by vessels of dangerous goods, safety standards for transport by charcoal vessels and No.3/96 Standards for the approval of packaging and packaging containing dangerous goods outline the requirements for ports.

Shipping containers containing cyanide product are stored in a designated dangerous goods storage area (segregated according to the international segregation guidelines) and are placed on a concrete surface which has a safe floor loading factor in an open air area environment. The product remains in the containers that are packed at the sodium cyanide factory (the sodium cyanide packaging has a sealed plastic liner which stops the contact of product from moisture or humidity) ready for loading for onward transport to the final destination.

The container storage area at the port has full CCTV coverage. The terminal adopts a range of strict internal controls and uses state-of-the-art technology to optimise operation and the safety. The ISO 28000 certification (Supply Chain Security Management) was obtained in 2009.

The port has an Emergency Procedure Guide especially developed for cyanide and a copy of the SDS. The port undertakes regular emergency response exercises, though these are not cyanide specific.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Argentina has been a Member State of the IMO Council since 1953 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018).

The port of Buenos Aires is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

The Prefectura Naval Argentina (PNA) is the competent authority (specifically the Directorate for Environmental Protection) and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments. The PNA consists of two branches; one section deals with policy and implementing the international Conventions; the other has an operational role and is responsible for planning and responding to pollution incidents. This department has 19 Rescue, Firefighting and Environmental Protection stations located in Argentina's principal ports (ITOPF 2020).

The PNA, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment). The PNA is currently engaged in a programme of training and exercises in preparation for spills of both oil and HNS.

PNA Regulation No.05-11 Obligatory Training Standards for Land Personnel Linked to Maritime, Fluvial and Hazardous Goods Shipping ensures minimum standards of preparedness and response are maintained (ITOPF 2020).

CONCLUSION

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

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6.0 PORT OF BURNIE, AUSTRALIA

13 November 2020

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Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Burnie, Australia during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BURNIE

The port of Burnie is located on the western shore of Emu Bay, Tasmania. Emu Bay is 3 km wide and 1.5 km deep facing in a northerly direction. The port services Tasmania's major West Coast mines and handles most types of bulk shipping requirements including, minerals, fuels, woodchips and logs, as well as containerised consumables and heavy-lift project cargo. There are four berths and several storage facilities available. A comprehensive fleet of mechanical equipment is available including container handling forklifts of up to 30 tonnes capacity and hazardous cargoes of most categories are handled as per Australian Standard 3846.

Owned and operated by the Tasmanian ports Corporation Pty Ltd (Tasports), the port of Burnie is one of Tasmania's key deep-water ports and the State's largest general cargo port. Tasports is a registered, private company fully owned by the Tasmanian Government. Each year more than five million tonnes of general freight and more than 50% of Tasmania's containerised freight are transited through the port (Tasports 2020a, internet site).

Marine and Safety Tasmania (MAST) and the Crown engage Tasports, under a Deed of Agreement, to perform specific functions within primary and secondary port areas under the *Marine and Safety Authority Act 1997*, Marine and Safety (Pilotage and Navigation) Regulations 2017 and *Pollution Waters by Oil and Noxious Substances Act 1987*, including provision of pilotage services, regulation enforcement in pilotage areas, maintenance of navigation aids, maintenance of a communications system, provision of emergency response, and provision of a response to marine based pollution (Tasports 2020b, internet site).

Port operations include:

- Port protocols and procedures are in place for docking of vessels at the port (e.g., use of Pilots and tugboats, management of weather conditions, tides, currents and safety, and general operations of the port). This sees to the safe docking and turnaround of vessels in and out of the port.
- Port entry is controlled by the Pilot who understands the port protocols and any unique issues regarding the approach and docking of vessels at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of a vessel to the port will consider channels, navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Third party stevedoring companies manage the onshore (wharf) operations at the dedicated container terminal. There are multiple deep water berths and the port currently handles hazardous cargoes of most categories.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that “the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The port of Burnie is directly connected to an intermodal rail facility which allows for containerised freight to be railed safely and efficiently to industry use in the hinterland, Launceston, and Hobart.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2020) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica’s Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Australia is an IMO Member State (1952) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port of Burnie to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. At any time there may be several restricted zones in and around the port that will be managed by security guards and additional fencing. They are established around certain activities such as international ships and in accordance with the maritime security regulations (Tasports 2020c, internet site).

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The security control measures for the port of Burnie are implemented in line with the requirements of the *Maritime Transport and Offshore Facilities Security Act (MTOFSA) 2003* (Australian Government 2020, internet site). A security regulated port is defined by an area that is used for movement, loading, unloading, maintenance or provisioning of security regulated ships. These areas are fenced with signage that indicates the access restrictions to port facilities and other maritime security zones within the port (Tasports 2020c, internet site).

Safe Work Australia's (2012) Code of Practice for Managing Risks of Hazardous Chemicals in the Workplace provides guidance for spill containment requirements for dangerous goods storage facilities/areas. Occupiers storing and handling dangerous goods must ensure that in each area where dangerous goods are stored or handled, provision is made for spill containment that will eliminate the risk from any spill or leak of solid or liquid dangerous goods and must also be able to contain within the premises, the dangerous goods that have been spilled or leaked and any solid or liquid effluent arising from an incident.

The port of Burnie uses isolation as a control measure to control physicochemical risks. Hazardous chemicals, including cyanide, are separated from any chemicals or other items/substances that may be incompatible. This is achieved by distance, barriers, or a combination of both. The choice of isolation measure used will depend on a range of factors, including the quantity of hazardous chemicals stored and handled and all other activities in the work area which may increase the risks. Locations used for the storage of hazardous substances also take into consideration the requirement for adequate ventilation.

Cyanide transited through the port of Burnie is temporary and remains on site for a short period of time. This is a management measure to minimise potential for accidental releases during storage. All sodium cyanide transited through the port of Burnie remains sealed within containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Burnie is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises.

AMSA, a federal government self-funded maritime safety agency established in 1990, is responsible for providing a national response capability for marine pollution. AMSA administers the *National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances*, a cooperative arrangement between the Federal, State and Territory Governments and the shipping, oil, exploration and chemical industries, emergency services and fire brigades (ITOPF 2020, internet site).

Under National Plan arrangements, a wide strategic range of response equipment is held at nine regional stockpiles. Equipment provided by AMSA is generally targeted at larger spills, though this is complemented by equipment held by port authorities, State Governments and individual oil and chemical companies.

Safe Work Australia's (2012) Code of Practice for Managing Risks of Hazardous Chemicals in the Workplace, specifically Regulation 43 and Regulation 361, requires an operation to prepare an emergency plan for the workplace. An emergency plan must be prepared and provided to the emergency services organisation if the quantity of Schedule 11 hazardous chemicals (hazardous chemicals, as specified in the Australian Workplace Health and Safety Regulations) used, handled, or stored at a workplace exceeds the manifest quantity for that hazardous chemical. The operation must revise the plan in accordance with any recommendations the primary emergency services organisation provides about its effectiveness.

CONCLUSION

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

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7.0 PORT OF BUSAN, SOUTH KOREA

17 November 2020

20360521-port- 007. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Busan, South Korea during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BUSAN

The port of Busan is located at the mouth of the Naktong River in South Korea. It is the fifth busiest container port in the world and the largest transhipment port in north-east Asia (Ship Technology 2020, internet site). The port of Busan is subdivided into North port, Gamcheon port, New port, and Dadaepo port.

The Busan port Authority (BPA) is responsible for developing, managing, and operating the port of Busan. The BPA's jurisdiction extends to Gamcheon port, which supplements the port of Busan, and Busan New port on Gaduk Island (World port Source 2020, internet site).

The port of Busan is a vital gateway for Korea, connecting the country to the Pacific Ocean and Asia. It is Korea's main port, handling 40% of the country's overseas cargo and 80% of its container cargo. Approximately 130 international vessels enter the port daily (World port Source 2020, internet site).

Annual figures from 2019 show that the port of Busan handled in excess of 21.9 million Twenty-foot Equivalent Units (TEUs) in a 12-month period. This included 5.1 million TEUs of imports, 5.1 million TEUs of exports, and 11.6 million TEUs of transhipments (BPA 2020, internet site).

There are four dedicated container terminals, these are Gamman, Shinsundae, Singamman, and Gamcheon. TEU capacities range from 340,000 to over 1,200,000 per year.

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots and tugboats, management of different weather conditions, tides, currents and safety and general port operations), which support the safe docking and turnaround of vessels in and out of the port.
- Entry into the port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessels to the port will consider channels, special navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Up to six third party stevedoring companies manage the different onshore terminal operations at the dedicated container terminals. Stevedoring operations include:

- Handling of containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles, and collecting and/or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers originates from the vessel's manifest.

Containers of cyanide received at the port of Busan are already sealed for transport. During periods of transit at the port of Busan containers of hazardous materials, including solid sodium cyanide, are stored at the Korail Interim Storage Facility in a dedicated dangerous goods area with an on-site security presence, including CCTV system to monitor container movements as well as anyone who may be in the storage facility. All container movements in and out of the transit storage facility are monitored using a bar code system operated from a central control room.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Busan is located in relatively close proximity to cyanide manufacturers, is connected to a well-developed intermodal transportation system consisting of railways, highways, waterways and pipelines, and is serviced by shipping companies that have routes to over 600 ports in 180 countries, including routes through the Asia-Pacific region.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

South Korea is an IMO Member State (1986) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1985) (SOLAS 2020, internet site), thereby requiring the port of Busan to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The BPA coordinates the operation of the port of Busan and must be informed of all ship movements and major operations. The production schedule (ship movement plan) is maintained by the BPA in consultation with the wharf operators. The BPA coordinates ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. The BPA is responsible for enforcing regulations on behalf of the MOF at the port of Busan including inspecting containers holding dangerous goods.

Vessels arriving at or departing from the port of Busan are required to declare dangerous cargo to the BPA by submitting a Transport Document for Goods by Sea (Package) form. This documentation is accompanied by the vessel's manifest and Safety Data Sheets (SDSs), which identifies the location and content of each container on the vessel, including containers with cyanide and other dangerous goods. The relevant port stevedoring company receives the vessels manifest which includes the containers for unloading and handling by them. This information is then captured in the stevedore's management systems which assists with the location where each container from the vessel is to be placed after unloading.

Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Busan has dedicated dangerous goods areas for hazardous goods awaiting loading to arriving vessels. The port is not used for the interim storage of cyanide as it is a transhipping depot used to transfer cyanide containers from trucks to ships.

The port operations for dangerous goods are registered and licensed by the government. Containers departing the port are checked against documentation for matching container numbers and product detail.

The cyanide product is packed initially into intermediate bulk containers and then into sealed shipping containers for transport to the port of Busan's Korail Interim Storage Facility where it is stored in a dedicated Dangerous Goods storage facility located in a secure rail shunting yard, pending shipment. All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

All cargo in and out of the facility is recorded by an electronic recording system managed by Korail. The area in which the containers are stored whilst transiting the port is suitable to effectively contain any spillage of solid sodium cyanide that may occur. The facility is demarcated, certified to handle and store all categories of dangerous goods, including Class 6.1, and contains fire-fighting equipment.

Pier 2 at the port of Busan is for the loading of all dangerous goods at the port. Containers from the Korail Interim Storage Facility are transported by truck to Pier 2 of North port where it is loaded directly onto ships.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

In January 2000 the National Maritime Police Agency (MPA) prepared the National Disaster Prevention Master Plan to provide for response to emergencies in the marine environment. The MPA is now called the Korea Coast Guard (KCG), a South Korean law enforcement sub-agency responsible for maritime safety and control off the coast. Established in 2017, the KCG is an independent and external branch of Ministry of Maritime Affairs and Fisheries. The KCG has overall responsibility for marine pollution response in Republic of Korea waters. It has five regional Coast Guard headquarters (Donghae, Busan, Mokpo, Incheon, and Jeju) (KCG 2020, internet site).

The KCG, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment).

Republic of Korea has been a Member State of the IMO Council since 1986 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018).

The port of Busan is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

CONCLUSION

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

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8.0 PORT OF CALLAO, PERU

17 November 2020

20360521-port- 008. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Callao, Peru during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CALLAO

The port of Callao is Peru's main commercial seaport and located 12 kilometres from the country's capital Lima. The port is governed by Peru's National port Authority, the Empresa Nacional De Puertos S.A. (ENAPU). The port is currently a point of entry for solid sodium cyanide chemicals into the Peruvian market place (World port Source 2020, internet site).

The port of Callao is protected by two artificial breakwaters. The northern breakwater is approximately 1,300 m in length and the southern breakwater is approximately 400 m in length. The opening between the two breakwaters is about 180 m in width. Pilots board vessels about one mile off the port entrance. The port has a good approach and navigation aids. There is a "traffic separation scheme" which is well marked on navigation charts. The access channel is well marked by sea buoys and lights on each breakwater.

Major international shipping companies such as Hamburg SUD, Maersk and MSC transport their shipments to the port of Callao. The port boasts world class standards for efficiency and productivity, averaging more than 30 gross moves per hour per crane, and ranked as the top container terminal facility in South America.

There are 16 berths for grains, general, bagged and liquid cargoes, lubricating and vegetable oils, mineral concentrates, containerised cargo, discharge of crude oil, clean products, propane gas, chemicals and water and passengers. There are seven open storage zones for the use of imported goods.

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

- Management of port protocols for vessel docking
- Entry via 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.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Callao is selected on the basis that it is the closest port to the customer that meets all reasonable industry standards for safety, security, and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance, and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Peru is an IMO Member State (1968) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1979) (SOLAS 2020, internet site), thereby requiring the port of Callao to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Port Operators DP World Callao and APN are aware when sodium cyanide containers are to arrive in the port. The control centre organises ship movements, tracks pilotage operations, and supervises terminal operations (APN 2020, internet site).

As an IMO Member State and to comply with the IMDG Code, vessels are required to declare dangerous cargo before arriving at or leaving the port, to the APN or relevant managing authority.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets.

All transhipping operations are carried out in dedicated dangerous goods areas by suitably trained personnel. The transhipping operations are monitored by the port's CCTV system and the containers are tracked using GPS to record the positioning of the containers within the dangerous goods storage areas (APN 2020, internet site).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

DP World Callao and APN Terminals have surveillance systems that monitor the security of goods via CCTV coverage. Both terminals operate in a pedestrian free environment and are adequately lit at night. Containers are placarded in accordance with IMDG labelling requirements and storage areas show relevant signage regarding no smoking, no open flames, eating, and drinking is not permitted and the personal protective equipment requirements (APN 2020, internet site).

During transhipping, manifests are handed over from the vessel to the terminal operators which include the weight and any hazards associated with the containers. This information is captured in the terminal operator's computer systems, which can identify dangerous goods consignments, determine the class of dangerous goods, and establish the segregation requirements for that product as required by the IMDG Code.

Containers are stored at the port with adequate ventilation to prevent build-up of hydrogen cyanide gas. The product remains sealed in containers at all times and the area of storage is suitable to effectively contain any spillage that may occur. Local specialised responders are on hand to provide assistance in the event of a serious incident.

The Callao port operator procedure calls for confirmation that the United Nations ID numbers, Department of Transport and National Fire Protection Association (NFPA) diamond number placards are present on the three visible sides of cyanide containers before they can be transferred to trucks and dispatched. This is required by Peruvian law when transporting hazardous materials.

Transhipping depots and interim storage sites are associated with the port of Callao. During unloading, containers of cyanide may be stored temporarily in designated transhipping depots within the confines of the port. These depots are managed and administered by the terminal operators DP World and or APN respectively. It is the policy of the port that all containers of sodium cyanide are to be removed from the port within 48- hours following discharge of the vessel (APN 2020, internet site).

Should the containers of cyanide not be cleared through customs within the 48-hour period, the terminal operators may transfer the containers to an inland clearance depot operated by Licsa under the authority of the Peruvian National Customs and Tax Administration (SUNAT). The Clearance Depot is located a short distance outside of the port confines. The containers remain under customs control until clearance has been arranged and collection from the Clearance Depot can be made by the importers.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Peru has been a member State of the IMO Council since 1968, it complies with the requirements of the IMDG Code.

The port of Callao is equipped with emergency response teams who are trained to respond to emergency situations. Medical facilities are available on site and include access to a doctor, paramedics and an ambulance. Firefighting trucks are present outside of the port area and can mobilise to the port where required. APN (another terminal operator) holds two emergency response exercises per year and DP World Terminal hold three (APN 2020, internet site).

The port of Callao is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training, and exercises (ITOPF 2020, internet site).

Previous due diligence assessments indicate that safety and security measures are present throughout the port, including upon entry and exiting of the port. The due diligence ascertained the port has suitable procedures and resources in place for handling emergency situations.

CONCLUSION

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

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9.0 PORT OF CARTAGENA, COLOMBIA

18 November 2020

20360521-port- 009. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Cartagena, Colombia during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CARTAGENA

The port of Cartagena lies on the northern shores of Cartagena Bay on the northern Caribbean shores of Colombia in South America. The port is 640 kilometres northwest of the country's capital, Bogota. The port of Cartagena is the second busiest port in Colombia, behind the Pacific-side port of Buenaventura, and the third busiest port in the Caribbean Sea. The port is strategically placed to capture sea traffic through the Panama Canal's transoceanic shipping lanes that connect the Atlantic and Pacific Ocean's sea traffic and other traffic around the Caribbean Sea (World port Source 2020, internet site; Logcluster 2020, internet site).

The port of Cartagena contains two entrances, the Cartagena entrance is 250 m wide with a depth of 11.5 m, and the Escombreras entrance is 420 m wide with a depth of 25 m. The port has two water areas, Zones I and II. Zone I includes basins for commercial traffic, fishing, and other activities, covering a over 225 hectares (218 hectares devoted to commercial traffic, 1.4 hectares for fishing, and 6.2 hectares for other activities). Zone II is a 4,778-hectare non-basin area of water surface for access, anchorage, and other activities (World port Source 2020, internet site; Logcluster 2020, internet site).

The Sociedad portuaria Regional de Cartagena S.A. (SPRC; Regional port Society of Cartagena) is the port Authority for the port of Cartagena. The port is Colombia's main container port, operating 24/7, 365 days a year, and includes three open ports, and over 40 private ports. The port of Cartagena offers large scale maritime, cargo (container, refrigerated, automobile, loose and dangerous goods), logistic and cruise ship services. It is capable of handling 4 million TEUs per year, with plans to expand to 5.2 million twenty-foot equivalent units (TEUs) capacity. The port also provides mooring facilities for ships up to 16,000 TEUs (Sociedad portuaria Regional de Cartagena (SPRC) 2020a, internet site: Logcluster 2020, internet site).

The port of Cartagena is the City of Cartagena's principal container management port, incorporating two container terminals SPRC and Contecar. The SPRC terminal has an annual capacity of 2 million TEUs and handles ships up to 16,000 TEUs. It has a dock depth of 16.5 m, contains one 700 m longitudinal pier for ships up to 180,000 deadweight tonnes (DWT) and two jetties (186 m and 202 m) for feeder ships. As a strategic connection centre for shipping lines, the SPRC terminal can receive five Super Post Panamax ships simultaneously. The SPRC terminal utilises up to 9 ship-to-shore gantry cranes with a 22-container span and twinlift capacity for simultaneous unloading of two 20 ft containers, and two 100 t capacity mobile harbour cranes. The storage yard area is approximately 25 ha, with over 30,000 storage cells for containers, stacked up to 6 high (SPRC 2020b, internet site).

The Contecar terminal has an annual capacity of approximately 3.2 million TEUs and also handles ships up to 16,000 TEUs. It has a dock depth of 16.5 m, contains one 1,000 m longitudinal pier. The Contecar terminal utilises 13 STS gantry cranes with a 22-container span and twinlift capacity for simultaneous unloading of two 20 ft containers. The storage yard area is approximately 70 hectares (SPRC 2020b, internet site; Logcluster 2020, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Cartagena is selected on the basis that it is the closest port to the customer that meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Colombia is an IMO Member State (1974) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1981) (SOLAS 2020, internet site), thereby requiring the port of Cartagena to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Harbour Master organises ship movements, tracks pilotage operations, and supervises terminal operations via the port Control Tower and real-time closed-circuit television (CCTV) monitoring. Container terminal software allows for the controlled tracking and placement of containers when removed from the vessel.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port area has a closed perimeter with restricted access that is controlled by the security service and port Police. CCTV is installed, with permanent recording on digital media, connected through fiber optics and centralized at a Control Centre.

The Control Centre for the port of Cartagena is equipped with computer management systems for alarms, dangerous goods, emergencies, communications, accesses, video surveillance, recording, etc. and is operational 24 hours a day, 365 days a year, with the service being provided by appropriately qualified staff. The Local Coordination Rescue Centre (in Spanish C.L.C.S.) of the State Society for Marine Search and Rescue (in Spanish SASEMAR) is also in the Control Centre, and whose operators share a room with those of the port Authority, in order to integrate and coordinate all maritime-port matters from the Control Centre, regardless of the legal powers that the law grants to each agency (port Authority of Cartagena 2020, internet site).

The port of Cartagena has in place an Internal Emergency Plan (IEP) (RD 145/1989 of 20 January), which approves the National Regulation for the Admission, Handling and Storage of Dangerous Goods in ports. The IEP outlines measures for the protection of property and people, areas in which operations for handling, storage and internal transport of dangerous goods. The port Authority has implemented the IEP since 1992 (port Authority of Cartagena 2020, internet site).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Colombia has been a member State of the IMO Council since 1974, and complies with the requirements of the IMDG Code.

certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

The Colombian National Contingency Plan for responding to spills of oil, products and harmful substances at sea and continental waters was developed by governmental and private bodies involved in the management of oil and noxious substances. It was coordinated by DGPAD with technical support from the Dirección General Maritima (DIMAR), a part of the Department of the Navy, and the national oil company, Compaňia Colombiana de Petróleos (ECOPETROL). The Plan was adopted by Decree number 321 in 1999. It identifies six regions, including one on the Atlantic coast and one on the Pacific coast (ITOPF 2020, internet site).

The National Contingency Plan (NCP) integrates all the local contingency plans to create a strategy for dealing with spills of all sizes in the main ports of the country. Spills in port would normally be controlled by the Capitanias del Puerto (Harbour Masters) who are under the authority of DIMAR, but elsewhere the Navy and Coastguard would coordinate the response (ITOPF 2020, internet site).

CONCLUSION

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

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10.0 PORT OF CASABLANCA, MOROCCO

18 November 2020

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Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Casablanca, Morocco during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CASABLANCA

The port of Casablanca refers to the collective facilities and terminals that conduct maritime trade handling functions in Casablanca's harbours and which handle Casablanca's shipping. The port is located on Morocco's north-western shores, near Hassan II Mosque. The port is one of the largest artificial ports in Morocco and in the world. The port handles more than 21.3 million tons of traffic annually, which is 38% of Moroccan traffic, and carries out a sales turnover of more than 894 Million Moroccan Dirhams. With an extent of 605 hectares and extending to more than 8 kilometres in length, the port can accommodate and treat more than 35 ships at the same time (Wikipedia 2020, internet site).

The port of Casablanca is managed by Marsa Maroc, the successor of the Office D'Exploitation des ports (OPED), a publicly owned establishment which has the principal role of ensuring the management of passengers, goods and ships passing through Moroccan ports (Wikipedia 2020, internet site).

There are two container terminals at the port of Casablanca. The container terminal operated by Marsa Maroc includes Container Terminal (East) which has 600 m of quays at 12 metres deep, 8 gantry cranes, 3 km of railway, capacity of 700,000 TEUs/year and covers 60 hectares. The container terminal operated by Somaport has 700 m of quays at 9.2 m deep, three gantry cranes, 10 rubber tyre gantry cranes, capacity of 300,000 TEUs/year and covers 30 hectares (National ports Agency (ANP) 2020a, internet site).

The port of Casablanca has intermodal connections and is connected to Morocco's main cities by highway and railway.

The Harbormaster's Office monitors the transit of goods in the port and the appropriate location of ships. The Harbormaster's mission is to enforce operating regulations in force for the maneuvering of ships. Composed of three operational entities: programming stops, maritime traffic and safety/environment, the Harbormaster's office has the human and material resources to carry out the tasks it is entrusted with. It is composed of three operational entities: programming stops, maritime traffic and safety/environment. The port has:

- A VTS control tower equipped with aids-to-navigation
- A CCTV system covering all the port's facilities and is equipped with an operational camera control center
- The PORTNET IT system, a communication platform integrating all stakeholders of the port community (ANP) 2020b, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient, and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Casablanca is selected on the basis that it is the closest port to the customer that meets all reasonable industry standards for safety, security, and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Morocco is an IMO Member State (1962) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1990) (SOLAS 2020, internet site), thereby requiring the port of Casablanca to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Harbour Master organises ship movements, tracks pilotage operations, and supervises terminal operations via the port Control Tower and real-time closed-circuit television (CCTV) monitoring. Container terminal software allows for the controlled tracking and placement of containers when removed from the vessel.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets.

For example, within the Somaport terminals the following protocols are in place based on the overall security plan for the port:

- The containers are enclosed and properly monitored by security guards and video monitoring cameras set up at strategic points and connected to the security center
- Access to the Somaport facilities is managed by security guards and control system for entry into Casablanca port at the port facilities
- Access to the container terminal is strictly prohibited to vehicles. Only persons holding a persona pass and badge on the vehicles (for Somport vehicles) will be authorised to access (Somaport 2020, internet site).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The product being transferred through the port is solid cyanide within intermediate bulk containers (IBCs) and within shipping container and the containers remain sealed which significantly reduces the potential for a cyanide release scenario. There are storage facilities at the port of Casablanca for containers at both container terminals, but it is not clear whether there is dedicated storage area for dangerous goods.

Cargo handling and storage services are provided at the port using modern equipment and staff seven days a week, 24 hours a day. The ISPS “International Ship and port Facilities Safety Code” is implemented and security and access control are provided at the port including controlled access points and perimeter security.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Morocco has been a Member State of the IMO Council since 1962 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018 2018).

The port of Casablanca is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

Limited information is available on the port of Casablanca emergency response capabilities, however the ANP (2020) indicates that the port of Casablanca is provided with infrastructure, equipment, and products to fight against pollution, and participates in the organisation of a national bi-annual drill (SIMULEX) to fight against accidental marine pollution by hydrocarbons, test ports' emergency plans, and coordinates with stakeholders.

This indicates that emergency plans have been developed and periodically tested, however the focus appears to be hydrocarbon spill related. Accordingly, it is considered likely that Orica will need to provide technical assistance, advice and potentially deploy resources in the event of that a cyanide release scenario occurs at the port of Casablanca.

CONCLUSION

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

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11.0 PORT OF CHALMERS, NEW ZEALAND

18 November 2020

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Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Chalmers, New Zealand during November 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CHALMERS

The port of Chalmers is located inside the greater Otago Harbour region. Situated on the lower east coast of the South Island of New Zealand, port Otago operates two wharf systems - port of Chalmers and port of Dunedin - within the Otago Harbour. Port Otago Limited is the managing body (port Otago 2020a, internet site).

The Otago Harbour is dredged to accommodate vessels with a maximum draught of 13.0 m from Taiaroa Head to port of Chalmers, where the container terminal is located. This enables the largest container ships in New Zealand trade to call at the port of Chalmers.

The port of Chalmers has three berths, suitable for handling containerised, multipurpose, and conventional vessels. Berthing flexibility is guaranteed by a swinging basin dredged to 13.5 m, with a turning diameter of 487 m. Fairway to port Chalmers Basin declared at 13.5 m (at chart Datum). The port of Chalmers Container Facility covers 15 hectares of heavy-duty paved area with the capacity to store over 7,000 containers, over 38,000 m^2 of covered warehousing is also available (port Otago 2020b, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots and tugboats, management of different weather conditions, tides, currents and safety and general port operations), which support the safe docking and turnaround of vessels in and out of the port.
- Entry into the port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessels to the port will consider channels, special navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Private third-party stevedores manage the onshore (wharf) operations at the dedicated Container Facility. Stevedoring operations include:

- Handling of containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles, and collecting and/or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers originates from the vessel's manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Proximity to major export production in the lower South Island, and the strategic location of the Otago Harbour for vessel rotation to and from deep-sea destinations makes the port of Chalmers (Otago Harbour) a key link in international supply chains. Intermodal freight transport and the emergence of nearby Dunedin as the regional centre for major export industries enables the port to act as the southern gateway for the key primary industries that drive New Zealand's international trade (Meat Industry Association 2020, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

New Zealand is an IMO Member State (1960) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1990) (SOLAS 2020, internet site), thereby requiring the port of Chalmers to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Harbour Control is manned 24 hours a day and is based at the gatehouse at the port of Chalmers. Harbour Control monitor VHF channels and can track vessels on the approaches to and within Otago Harbour utilising Radar and Automatic Identification System (AIS). They also monitor Aids to Navigation in the form of lights, and beacons, providing the status of these to shipping and Harbour users. Real time container tracking is available via the port's JMT RIA tracking system (port Otago 2020c, internet site).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms, and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Chalmers has a statutory obligation to comply with, amongst others, the security requirements of the port's New Zealand Customs (NZC) Procedure Statement, the *Customs and Excise Act 1996* (New Zealand Customs Service 1996) and the *Maritime Security Act 2004* (Ministry of Transport 2018). The primary provisions being laid out in the ISPS Code, particularly *Part 2 Ship and port Facility Security, Subsection 40 – port Facility Security Plans and Part 3 Preventative Security Measures, Subsection 46 – Restrictions with Respect to port Security Areas.*

For the import of dangerous goods, the port enforces either a Direct to Motor Vehicle (DMV) or L&R process. Allowable dwell times are specified based on dangerous goods class and UN numbers, the dwell time commences from the time the container is discharged onto the wharf. The sodium cyanide allowable dwell time is 72 hours.

The *Hazardous Substances and New Organisms Act 1996* (HSNO Act) (Ministry for the Environment 2017) and its associated *Codes of Practice - HSNOCOP-16, HSNOCOP-28 and HSNOCOP-2* ensure that cyanide is stored securely and with adequate ventilation.

All entry to the port is controlled and subject to the possession of acceptable photographic identification. The port and wharf area are closed to general public access and entering the port facilities is deemed as consent for identification checks and searching. Failure to consent to the security measures in place will result in admittance being denied.

port Otago Limited and the New Zealand Customs Service together to maintain safe and secure trading conditions. Systems and equipment are in place to provide border security and includes the use of mobile non-invasive inspection technologies. Transporters are subject to compliance requirements.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

New Zealand has been a member State of the IMO Council since 1960, it complies with the requirements of the IMDG Code.

The MNZ is the competent authority and has responsibility for all forms of marine emergencies, including administering the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

The port of Chalmers is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

Code of Practice HSNOCOP-36 Preparing for a Chemical Emergency also provides a comprehensive guide to emergency management suitable for use by businesses and facilities engaged in the storage, transport, use and handling of chemicals and hazardous substances.

CONCLUSION

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

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12.0 PORT OF CONAKRY, GUINEA

10 December 2020

20360521-port- 012. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Conakry, Guinea during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CONAKRY

The port of Conakry is located on the South Coast of Guinea and is the main port of Guinea. The port has a 20 hectare container yard and container storage capacity of 8,000 twenty-foot equivalent units (TEUs). The theoretical annual capacity of the port of Conakry is 600,000 TEUs. The container terminal is jointly operated by Bolloré ports and the port Authority of Conakry. The port operates a continuous loading and unloading service, and is linked to road and rail systems (Logcluster 2020, internet site).

The port of Conakry Harbour Master oversees all port operations, including:

- Management of port protocols for vessel docking
- Entry to the port by 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 programs for container placement and movement including identification of hazardous cargoes.

Guinea is a member of the International Maritime Organization (IMO) Council and the Abuja Memorandum of Understanding, and as such performs its port State obligations, supervises foreign ships that berth at Conakry, and promotes compliance with international conventions among Flag States through port State Control.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Conakry is located in relatively close proximity to end use destinations in Guinea and the West Africa region. The port is connected to transportation networks consisting of railways and highways.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2020) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port.

The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Guinea is an IMO Member State (1975) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1981) (SOLAS 2020, internet site), thereby requiring the port of Conakry to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Guinea requires a pre-shipment inspection for all imports into the country. This is implemented at the point of loading of the container and the inspection agency seals the container with their own specific seal in addition to the manufacturers own seal provisions.

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDSs).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All solid sodium cyanide that transits the port of Conakry is collected by the relevant carriers as soon as possible after arrival. Express clearances are initiated where possible to minimise the transit period. During periods of transit, containers of solid sodium cyanide are segregated accordingly and stored in a secured and signed area prohibiting smoking, drinking, and eating. All personnel, outside those operating top lift forklifts, are warned to keep away from the containers.

All signage is provided in French, the national language of Guinea.

Guinea requires a pre-shipment inspection for all imports into the country. This is implemented at the point of loading of the container and the inspection agency seals the container with their own specific seal in addition to the manufacturers own seal provisions.

The port of Conakry is a secure area with an on-site security presence. Security watch is compulsory for all ships carrying sodium cyanide. The port’s security are armed and trained to deal with intruders. The port’s security presence is a facet of the port’s ISPS Code protocols.

All cyanide remains within its sealed containers at all times preventing contact with water and other incompatible materials. The area of transit storage is well segregated and in an open area to prevent the build-up of hydrogen cyanide gas.

Only solid sodium cyanide is transited via the port of Conakry. A previous due diligence assessment indicated that the area in which the containers are located whilst transiting the port is suitable to effectively contain any spillage of solid sodium cyanide that may occur.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Guinea has been a Member State of the IMO Council since 1975 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018). Although not specifically addressed in the due diligence the port of Conakry has a basic emergency response by following the IMDG Code requirements.

The port of Conakry is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

Emergency response is affected by external response agencies which are located close by to the port. The port itself has a limited emergency response capability than can assist the external agencies. In an emergency situation, the port's security presence initiates a lock down of the port to prevent access to the port except for authorised emergency services responding to the emergency situation.

CONCLUSION

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

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13.0 PORT OF DAKAR, SENEGAL

15 January 2021

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Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Dakar, Senegal during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF DAKAR

The port of Dakar is located in the State of Colima, in the Republic of Senegal. Dakar is a deep sea port and is located at the intersection of the main sea routes serving the West African coast. The port is strategically placed, located at the most advanced point of the West African coast, and at the intersection of carrier lines linking Europe to South America, and North America to South Africa (Port Autonome de Dakar 2020a, internet site).

It is an international port of transit and serves as the gateway for Mali thus offering the possibility of additionally serving Niger and Burkina Faso.

The port is divided into two separate trading zones (North and South) separated by a military zone, ship repair shops and a fishing port. The container terminal in the North Zone of the port of Dakar covers an area of 24 ha. It has a linear quay of 700 m in length with three berths ranging from 12 to 13 m deep. Modern equipment is used for handling, including four docks (including two post-panamax), four Gottwald cranes on 100-tonne tyres, ten gantry cranes, 15 reach stackers and 400 refrigerator outlets (Port Autonome de Dakar 2020a, internet site).

The operator of the container terminal is DP World and they oversee the annual traffic of approximately 300,000 twenty-foot equivalent units (TEUs). The port also has separate terminals for bulk goods and hydrocarbons.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Dakar is strategically placed, located at the most advanced point of the West African coast, and at the intersection of carrier lines linking Europe to South America, and North America to South Africa. It is an international port of transit and serves as the gateway for Mali thus offering the possibility of additionally serving Niger and Burkina Faso.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Senegal is an IMO Member State (1960) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1997) (SOLAS 2020, internet site), thereby requiring the port of Dakar to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Center organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The Senegal port Authority states that the port of Dakar has taken significant steps to align its facilities and operations with the directives of the International Convention for the Safety of Life at Sea (SOLAS) 1974, convention. Therefore, every ship applying for permission to enter, and every port facility operator working in the port of Dakar must ensure compliance with the security and safety requirements for ships and port facilities as issued by the IMO (port Autonome de Dakar 2020b, internet site).

The Port of Dakar has:

- A centralised navigation aid at the harbor lookout, equipped with an Automated Identification System (AIS) and functional mark-up structures
- A surveillance system for the harbor and the water plan using radars, remote monitoring systems and nautical patrols
- Security measures for access and the port enclosure with the setting up of a multi-purpose operational centre equipped with high-tech surveillance equipment IMO (Port Autonome de Dakar 2020b, internet site).

In 2016 security provisions at Dakar was strengthened with the establishment of a corps of 450 officers trained in ISPS code standards and the reinforcing of perimeter and access point security measures.

Naval assets for maritime and ground surveillance (patrol vehicles and video surveillance) have been put in place. The port of Dakar aims to have ISO 28000 certification by 2023 and has recently contracted a private enterprise to begin putting in place the required equipment, materials and maintenance protocols to achieve certification (Port Autonome de Dakar 2020a, internet site).

The Port of Dakar contains 112.5 thousand square metres of open surface storage, 48.8 thousand square metres of covered storage space, and 15 thousand square metres of cold stores. In addition, it has 13 hectares of surface for storing containers (World Port Source - Port of Dakar 2021, internet site).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Senegal has been a Member State of the IMO Council since 1960 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018).

The Port of Dakar is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

CONCLUSION

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

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14.0 PORT OF DAR ES SALAAM, TANZANIA

11 December 2020

20360521-port- 014. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Dar es Salaam, Tanzania during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF DAR ES SALAAM

The port of Dar es Salaam is located on the East Coast of Africa and is the principal port of Tanzania. Dar es Salaam handles approximately 95% of the Tanzania international trade and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda, and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries (Tanzania port Authority 2020b, internet site).

The port of Dar es Salaam has a rated capacity of 4.1 million (dwt) dry cargo and 6.0 million (dwt) bulk liquid cargo. The port has a total quay length of 2 km with eleven deep-water berths.

The Tanzania ports Authority (TPA) operates the port of Dar es Salaam, but all containerised cargo is handled by the Tanzania International Container Terminal Services Ltd (TICTS), which is located in the port of Dar es Salaam and is the largest container terminal in Tanzania. The terminal has four berths totalling 725 m in length with a capacity to handle in excess of 500,000 twenty-foot equivalent units (TEUs) per year which includes many classes of Dangerous Goods cargo (Hutchison ports Tanzania 2020, internet site).

Port operations include:

- Port protocols exist for docking of vessels, e.g., use of Pilots; use of tug boats; different weather conditions, tides, currents; safety; and general port operations. This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides, and weather.
- Once the vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification, segregation requirements.

The stevedoring company TICTS operate under a long-term lease agreement with the TPA and manage the on-shore (wharf) operations at the dedicated container terminal. This is the terminal currently used by the Mediterranean Shipping Company to facilitate the unloading of their vessels. The stevedoring operations include (Tanzania ports Authority 2020c, internet site):

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of dangerous goods discharged by vessels at the container terminal are moved by TICTS to a dedicated dangerous goods storage area within the port confines for storage until customs clearance has been completed and transport is arranged. Containers of Cyanide are segregated from other classes of dangerous goods. This area has minimal traffic flow and is large enough to allow space for appropriate segregation of different classes of dangerous goods (Tanzania port Authority 2020b, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Dar es Salaam is the principal port of Tanzania and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda, and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Tanzania is an IMO Member State (1974) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (2001) (SOLAS 2020, internet site), thereby requiring the port of Dar es Salaam to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

As a member of the IMO and to comply with the IMDG Code and the *Tanzania Harbours Authority Act, 1977* vessels are required to declare dangerous cargo before arriving at or leaving the port (Tanzania ports Authority 2020a, internet site).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Cyanide on arrival is placed in a segregated area whilst awaiting relevant clearances. This area is clearly signed providing appropriate warning to all port personnel. Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. Additionally, signage is displayed prohibiting smoking and the consumption of foodstuffs and liquids in the areas where hazardous goods are being stored.

The port of Dar es Salaam 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 which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage may be subject to an additional security presence. The port security egress checkpoint checks a driver's documentation to ensure approval has been granted for the removal of the container, that the container number physically matches with the documentation and that the seal is intact on the shipping container.

The port has a minimum standard of personal protective equipment required 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.

Sodium cyanide product remains sealed inside its container at all times. Containers are in a segregated area which is open to the air to prevent the build-up of hydrogen cyanide gas.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Tanzania has been a Member State of the IMO Council since 1974 (IMO 2020, internet site), it complies with the requirements of the IMDG Code (IMO 2018).

The port of Dar es Salaam is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

CONCLUSION

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

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15.0 PORT OF GLADSTONE, AUSTRALIA

11 December 2020

20360521-port- 015. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Gladstone, Australia during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF GLADSTONE

The port of Gladstone is located approximately 525 km north of Brisbane in Queensland, Australia, and is the principal port in central Queensland. It is owned and managed by Gladstone ports Corporation (GPC), which is a statutory corporate body of the Government of Queensland and is charged with overseeing the commercial activities in the port, including the maintenance of the port infrastructure and provisioning of pilots. The port of Gladstone is Queensland's largest multi-commodity port, handling over 30 different products. Major cargoes include coal, bauxite, alumina, aluminium and cement. The port has a total throughput of more than 98 million tonnes per annum (Mtpa).

The port of Gladstone has eight main wharf centres, comprising 20 wharves:

- RG Tanna Coal Terminal – four wharves owned and operated by GPC
- Barney Point Terminal – one wharf owned and operated by GPC
- Auckland Point Terminal – four wharves owned by GPC and operated by others
- Fisherman's Landing – four wharves operated by multiple companies
- South Trees – two wharves operated by Queensland Alumina Limited (QAL)

- Boyne Wharf – one wharf operated by Boyne Smelters Limited (BSL)
- Curtis Island – three wharves operated by Liquefied Natural Gas (LNG) companies; Australia Pacific LNG (APLNG), Santos GLNG and Queensland Curtis LNG (QCLNG)
- Wiggins Island Coal Terminal – one wharf operated by Wiggins Island Coal Export Terminal (WICET).

Of the 20 wharves, the multi-user Auckland Point Terminal No. 4 is the only container wharf within the port of Gladstone. It has a berth pocket of 11.4 m (LAT), a berth pocket length of 220 m, wharf face of 220 m, wharf width of 33.9 m, wharf length (including mooring dolphins) of 269 m, bollard capacity of 100 tonnes (t), and a max vessel Dead Weight Tonnage (DWT) of 70,000 t. Container operations at Auckland port Terminal No. 4 are carried out by a large mobile container crane.

The port of Gladstone limits ship size to 315 metres (m) length overall (LOA), beam 55 m and draft dependent on tide but not likely to exceed 18 m. Loaded ships may be draft restricted. The design depth of the Outer Harbour Channel is 16.1 m but may be less than this between scheduled dredging; a vessel can sail (weather conditions permitting) at 17 m draft on any day of the year and up to 18 m draft with the appropriate tide heights.

Port service providers are available 24 hours per day, seven days per week.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Gladstone's location offers entry to international markets through direct connectivity to Australia's major road and rail networks and international shipping lines.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Australia is an IMO Member State (1952) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port of Gladstone to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Maritime Safety Queensland (MSQ), through the authority of the Harbour Master, has jurisdiction over the safe movement of all shipping within the pilotage area. The scheduling of ship movements is initiated by the agent submitting movement details for a vessel to the Gladstone Vessel Traffic Services (VTS) Centre via the Queensland Shipping Information Planning System (QSHIPS).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDSs).

Division 13 of the Transport Operations (Marine Safety) Regulation 2004 outlines the duties of owners and masters of vessels in relation to the carriage of dangerous goods. The regulations require that ships carrying dangerous goods and bulk liquids must comply with the appropriate directions of the IMDG code (IMO 2018) and Australian Standard (AS) 3846-2005 *The Handling and Transport of Dangerous Cargoes in port Areas* (Standards Australia 2005) and are to notify GPC and VTS of the intent to bring dangerous cargo into or depart from a pilotage area.

Ships have to report the information, namely the arrival and/or departure of the ship, the removal of the ship to another berth or anchorage, the transfer of the cargo to another ship the loading of the dangerous cargo, and the details of the dangerous cargo in an approved form.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All sodium cyanide transited through the port of Gladstone remains contained within its sealed containers at all times preventing contact with water and other incompatible materials. A review of recent aerial imagery showed that the container storage area is fenced with a secure entrance and a boom gate.

GPC is responsible for the security and protection of the port's infrastructure and assets, and the provision of risk-based security services.

In general, port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities, regulated by the *Maritime Transport and Offshore Facilities Security Act, 2003* (MTOFSA) (Australian Government 2012). This act requires the establishment of maritime security zones in and around the port and wharf facilities as part of GPC's maritime security plans. These regulated zones place restrictions and limitations on who may enter.

In addition to GPC's maritime security plan, security regulated ships, port facilities and port service providers also have maritime security plans which outline the measures and procedures undertaken to protect vessels that trade in Australian seaports and the port infrastructure that services those vessels.

The Landside Restricted Zones (LRZ) for GPC managed facilities within the port of Gladstone include the wharves and wharf approaches. To enter these areas, a person must have authorisation to do so and produce and display a current GPC identification card and a Maritime Security Identification Card (MSIC). Entry to all other areas of a facility will require authorisation and a current GPC ID card.

The zone will be in force one hour prior to a Security Regulated Ship berthing at a facility. The zone will remain in force until the Security Regulated Ship has intentionally let go its moorings and has cleared the berth by a distance of no less than 400 m. The zone will be in force at all maritime security levels.

There are Restricted Zones in place around all berths within the port of Gladstone. These zones are operational at all times of the day and night. These zones include a distance of 60 m from the seaward face of a berth and 20 m from the most westerly, easterly, approach and landside face of a berth, inclusive from the high water mark to the sea bed. Unauthorised entry into these zones is an offence under both State and Commonwealth legislation Gladstone Ports Corporation (2020b).

The Maritime Security Identification Card (MSIC) is a nationally recognised identity card which identifies the holder as a person who has met the necessary background requirements to work in a maritime security zone. It shows that the holder has met the minimum security requirements to work unescorted or unmonitored in a maritime security zone and is not considered a threat to maritime security.

Security cameras operate at GPC's facilities, to ensure public safety, for the investigation and prosecution of criminal offences and for the investigation of safety, environmental or security incidents Gladstone ports Corporation (2020b).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Gladstone is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (ITOPF 2020, internet site).

AMSA, a federal government self-funded maritime safety agency established in 1990, is responsible for providing a national response capability for marine pollution. AMSA administers the *National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances*, a cooperative arrangement between the Federal, State and Territory Governments and the shipping, oil, exploration and chemical industries, emergency services and fire brigades.

Under National Plan arrangements, a wide strategic range of response equipment is held at nine regional stockpiles. Equipment provided by AMSA is generally targeted at larger spills, though this is complemented by equipment held by port authorities, State Governments and individual oil and chemical companies.

Section 12 (Emergency, Pollution, Marine Incidents) of the *port Procedures and Information for Shipping, port of Gladstone* (MSQ 2020) provides guidance to the port community about initial response procedures to dangerous incidents, emergencies, terrorist acts and disasters.

GPC has an Emergency Response Plan that covers situations such as cyclones, marine incidents, bomb threats, fire, explosion or fatalities. Copies of the Response Plan are held at GPC's office in the port, by the Regional Harbour Master and by a number of port users and other key agency contacts Gladstone ports Corporation (2020a).

CONCLUSION

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

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16.0 PORT OF IZMIR, TURKEY

11 December 2020

20360521-port- 016. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Izmir, Turkey during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF IZMIR

The port of Izmir lies on the south-east coast of Izmir Gulf in West Turkey, to the east of Aegean. It is the largest seaport in West Turkey. port of Izmir is about 505 nautical miles south of Bur Said, 569 nautical miles east of Mersin, and 509 nautical miles of Mesos, 198 nautical miles west of Peiraievs, and 276 nautical miles north of Istanbul.

The General Directorate of Turkish State Railways (TCDD) is the port authority for the port of Izmir. Izmir is the third largest city in Turkey and the port facility is connected with Turkey's rail and highway networks providing a key node for import and export for the country.

According to the Turkish Ministry of Transport's Maritime Bureau data, port of Izmir has set a record for 1.44 million Twenty-foot equivalent units (TEU) container throughput in 2017. The container terminal has 7 berths which have an alongside depth of 13 m. The total length of the berths is 1050 m.

The terminal covers an area of 152,000 m^2, and the holding capacity is 7074 TEU. Container operations at the quays are carried out by five gantry cranes of 40 tons capacity. The operations at the container yard are carried out by 19 rubber-tyred transtainers and 21 reach stackers of 40 tons capacity, together with 28 containers forklifts of up to 42 tons capacity. Reefer facilities for refrigerated containers are also available. The berths and the yard behind are well equipped with modern handling facilities. There is one floating crane with 100 tons capacity, five container quayside gantry cranes of 40 tons capacity, nine shore cranes of 3-15 tons capacity, 14 mobile cranes of 5-25 tons capacity, 16 rubber-tyred transtainers of 40 tons capacity, 21 reach stackers of 40 tons capacity, 28 container forklifts of 10-42 tons capacity, 47 general cargo forklifts of 2-5 tons capacity, 36 tug masters, two loaders, and 62 trailers.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Izmir is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Turkey is an IMO Member State (1958) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port of Izmir to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port Authority organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Storage facilities at Izmir consist of 215,940 m^2 open storage and 26,978 m^2 covered areas including a designated hazardous cargo warehouse. Storage in transit may occur in the event that receipt at the port is delayed. Cargo handling and storage services are provided at the port using modern equipment and staff 7 days a week, 24 hours a day. The ISPS “International Ship and port Facilities Safety Code” is implemented and security and access control are provided at the port including CCTV, controlled access points and perimeter security.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Turkey has been a member State of the IMO Council since 1958 (IMO 2020, internet site), it complies with the requirements of the IMDG Code (IMO 2018).

Pollution response in Turkey is governed under Act 5312 Law Concerning the Principles of Emergency Response and Compensation for Damages for Pollution of the Marine Environment by Oil and Other Harmful Substances. The Undersecretariat for Maritime Affairs has ultimate responsibility for dealing with oil pollution at sea and the Ministry of Environment and Urbanisation undertakes or causes to be undertaken the necessary response measures. In the event of an incident, a Damage Commission of these authorities is usually convened and chaired by the Provincial Head of the Ministry of Environment and Urbanisation.

At local level, a governor or mayor may direct the Damage Commission. Local responsibility is designated to managers of individual ports or, in the case of spills at sea, to the Turkish Navy. Oil on shore would normally be dealt with by the municipalities or installation concerned.

Turkey has regional and national emergency response plans based on a tiered response structure.

CONCLUSION

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

REFERENCES

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17.0 PORT OF JAKARTA, INDONESIA

11 December 2020

20360521-port- 017. RevA

Author: Sara Pritchard | Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Jakarta, Indonesia during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF JAKARTA

The port of Jakarta (also known as Tanjung Priok) lies on the north-west coast of the island of Java at the mouth of the Ciliwung River, about 116 nautical miles east south-east of the port of Panjang on the island of Sumatra. The twelfth largest city in the world, the port of Jakarta is an important centre for education and industry (World port Source 2020, internet site).

The port of Jakarta is the busiest port in Indonesia. It handles more than 30% of non-oil-and-gas cargo in the country, and around 50% of the entire flow of goods into and out of Indonesia. The comprehensive intermodal transport and modern technology facilities at the port allow it to connect to a network of cities in Indonesia (Logcluster 2020, internet site).

The port of Jakarta contains twenty terminals devoted to general, dry bulk, liquid bulk, and containerised cargoes. Specialised terminals handle oil, chemicals, scrap, and passengers. The port of Jakarta has 81 berths with a total length over 12.8 km with alongside depths ranging from 3 to 14 m. The port of Jakarta also contains storage areas of 662,000 m^2 with capacity to store over 401,000 tonnes of cargo.

In 2007, over 17,800 vessels carried a total of almost 42 million tonnes of cargo and 3.7 million TEUs of containerised cargoes through the port of Jakarta. This total included 10.5 million tonnes of containerised goods in 3.7 million TEUs, 8.2 million tonnes of liquid bulk cargo, 7.9 million tonnes of general cargo, 8.2 million tonnes of dry bulk cargo, and 1.8 million tonnes of bag cargo.

Indonesia ports Corporation Tanjung Priok (IPC or PELINDO II) branch manages vessel traffic in port waters and basins, including anchoring and berthing of cargo ships (Logcluster 2020, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Indonesia is an IMO Member State (1961) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1981) (SOLAS 2020, internet site), thereby requiring the port of Jakarta to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

port Operators are fully aware when sodium cyanide containers are to arrive at the port. The stevedores receive the vessel's manifest along with other shipping information prior to arrival. This includes unloading and handling information of dangerous goods for the port, this information is then captured in the terminal operator's advanced information management system allowing for the complete traceability of cargoes within the port.

Indonesia has National regulations in place for the minimum requirements for radio-communication and ship tracking in Indonesian waters and port facilities, the port of Jakarta ensures all vessels satisfy and abide by these regulations.

All transhipping operations are carried out in a dedicated dangerous goods area by suitably trained personnel. The transhipping operations are monitored by the port's CCTV system and the containers are tracked to record the positioning of the containers within the dangerous goods storage areas.

Following final clearance, the consignment is placed on road transport vehicles for the inland transportation leg to the relevant end destination. These road transport vehicles are owned by the ICMI accredited transport company providing the road transport service.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities. All vessels calling at Indonesian ports must meet ISPS requirements.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each case.

The port of Jakarta operates under a suite of National regulations that ensure compliance with the above. For the handling and storage of dangerous goods, these regulations ensure that shipments of cyanide are authorised for discharge from the vessel, handled by appropriately trained personnel, stored in designated and secured areas, segregated according to dangerous goods classes, and removed from the port in a timely manner.

The port has restricted access, and the Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. All sodium cyanide transited through the port of Jakarta always remains sealed within containers.

Security requirements are also addressed under National regulations and the port of Jakarta satisfies the conditions set out for security personnel and check points, monitoring and surveillance systems.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Indonesia has been a Member State of the IMO Council since 1961 (IMO 2020, internet site) and complies with the requirements of the IMDG Code (IMO 2018). The Indonesian Government also has national standards in place for the transportation, handling and storage of hazardous substances.

Indonesia is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, and regular training and exercises (International Tanker Owners Pollution Federation [ITOPF] 2020, internet site).

Indonesia's National Oil Spill Contingency Plan (NOSCP) (2018), extends to hazardous and noxious substances (HNS). In the event of an emergency, the National Team for Oil Spill Response would provide the technical expertise, with input from other institutions, government departments, the private sector and other non-government organisations. The National Team through its Command and Control Centre would carry out the response, using personnel, equipment and materials belonging to its member organisations in the vicinity of the emergency incident (ITOPF 2020, internet site).

The DGST is the competent authority and administers the Plan for dealing with pollution by oil and other noxious substances in marine and freshwater environments. The DGST has equipment which could be utilised for HNS spills and is supported by further equipment from the oil industry.

CONCLUSION

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

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Golder Associates (2020). *International Cyanide Management Code. Orica Australia Pty Ltd, Global Marine Supply Chain Detailed Audit Report – Amendment*. Golder Report Number 19120760-002-R-Rev2. July 2020.

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18.0 PORT OF KLANG, MALAYSIA

14 December 2020

20360521-port- 018. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Klang, Malaysia during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF KLANG

The port of Klang is Malaysia's principal port. It is located at the town, port Klang, on the west coast of Peninsular Malaysia, about 40 km from the capital city, Kuala Lumpur. Port Klang is served by three major gateways called North port, South port (Southpoint) and Westport. There are 19 berths in North port, eight in South port and 31 in Westport. In addition, the Kapar Power Station operates two berths while Boustead Cruise Centre Terminal operates three berths (port Klang Authority (PKA) 2020a, internet site).

PKA is a statutory corporation that administers the port and has five core functions:

- Trade facilitation
- port planning and development
- Regulatory oversight of privatised facilities and services
- Free Zone Authority
- Asset management.

The port of Klang registered a growth of 10.7% year-on-year for January to November 2019 in container handling with a total of 12.32 million twenty-foot equivalent units (TEUs) (Hellenic Shipping News 2020, internet site). The port has 34 container berths and sufficient equipment to support the movement of cargo with approximately 98 quay cranes, 269 rubber tyred gantry cranes, 15 straddle carriers, 713 prime movers, 704 trailers, and 14 reach stackers (PKA 2020b, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security, and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Malaysia is an IMO Member State (1974) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1981) (SOLAS 2020, internet site), thereby requiring the port of Klang to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

PKA organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

PKA operates a Vessel Traffic Management System (VTMS) for the pilotage district of port Klang. The system is linked to the Malacca Straits Surveillance System and is supported by a network of radars, Automatic Identification System (AIS) and communication facilities (PKA 2020c, internet site).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

PKA operates a VTMS for the pilotage district of port Klang. The VTMS is linked to the Malacca Straits Surveillance System and is supported by a network of radars, AIS and communication facilities. Primarily, the area of jurisdiction of the VTMS is only within the pilotage district including the approaches to the North and South Channel. However, the radar coverage extends up to 15 miles from the entrances of the port (PKA 2020a, internet site).

Vessels within the coverage area are tracked by a network of four radars located at Pulau Angsa, One Fathom Bank, Bukit Jugra and VTMS Control Centre. Vessels due to arrive at pilot stations are identified and tracked in advance. ETA information is conveyed to the appropriate pilot control centres. Vessels are notified of Pilot boarding and berthing information. Navigational information is also relayed to vessels under pilotage (PKA 2020a, internet site).

The port has taken significant steps to align its facilities and operations with the directives of the International Convention for the Safety of Life at Sea (SOLAS) 1974 convention (SOLAS Convention), specifically, the International Ship and port Facility Security (ISPS) Code which is an amendment to the SOLAS Convention (1974/1988) on minimum security arrangements for ships, ports and government agencies. Therefore, every ship applying for permission to enter, and every port facility operator working in the port must ensure compliance with the security and safety requirements for ships and port facilities as issued by the IMO.

The port has a Dangerous Goods Department that conducts supervision and inspections where dangerous goods are handled at the port and oversees that dangerous cargoes stored and handled in the port comply with the laws in force, therefore minimising the potential for accidental releases.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Malaysia has been a member State of the IMO Council since 1971 (IMO 2020, internet site), it complies with the requirements of the IMDG Code (IMO 2018).

The port of Klang is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

CONCLUSION

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

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19.0 PORT OF LAE, PAPUA NEW GUINEA

15 December 2020

20360521-port- 019. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Lae, Papua New Guinea during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF LAE

The port of Lae is Papua New Guinea's (PNG's) largest and busiest port, located in the Morobe province of PNG, Lae is the second largest city and the capital of the province. The port handles bulk cargo, tankers and liquefied natural gas carries, RO-RO vessels and general container cargo. There are no wharf mounted gantry cranes, however forklifts are available and capable of lifting up to 20 tonne containers (Logcluster 2020, internet site).

The port has five berths with a total length of 520 m, a total storage area of 53,620 m^2 for cargo marshaling, and maximum depth of 13.7 m. Port of Lae handles approximately half of the throughput of PNG's 22 declared ports, and more than 60% of the international and coastal trade registered in PNG ports Corporation Limited (PNGPCL) ports, it generates more than 50% of PNGPCL's total revenue (Logcluster 2020, internet site).

Lae serves as a gateway linking the world market with a large hinterland comprising Morobe province, the city of Lae (PNG's industrial and commercial centre), and five resource-rich provinces in the Highlands. PNG's most significant road, the Highlands Highway, runs from Lae to the Highlands region, dispensing imports ranging from heavy machinery to food products in the region and bringing the country's major export items to the port (Logcluster 2020, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots and tugboats, management of different weather conditions, tides, currents and safety and general port operations), which support the safe docking and turnaround of vessels in and out of the port.
- Entry into the port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessels to the port will consider channels, special navigation points, currents, tides, and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel's manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

The stevedoring service providers (Lae port Services Pty Ltd and United Stevedores) manage the onshore (wharf) operations at the dedicated container terminal. This is the terminal currently used by ICMI accredited transporters to facilitate the unloading of their vessels. Stevedoring operations include:

- Handling of containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles, and collecting and/or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers originates from the vessel's manifest.

When cyanide containers are discharged from a vessel, the normal practice is for the containers to be loaded directly onto onward transport trucks and to be removed from the port.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Lae serves as a gateway linking the world market with a large hinterland comprising Morobe province, the city of Lae (PNG's industrial and commercial centre), and five resource-rich provinces in the Highlands. PNG's most significant road, the Highlands Highway, runs from Lae to the Highlands region, dispensing imports ranging from heavy machinery to food products in the region (Logcluster 2020, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

PNG is an IMO Member State (1976) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port of Lae to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

PNG's maritime and merchant shipping legislation and their supporting regulations were enacted to ensure compliance with international standards and best shipping practices that are accepted universally by the maritime nations in the world under the auspices of the IMO (National Maritime Safety Authority (NMSA) 2020c, internet site).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Control Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

When cargo is discharged, the stevedores check the security seals against the manifest and discharge paperwork. If the seals do not match, the cargo owner is notified. Clerks match up paperwork with what has been discharged against the vessel manifests.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

There is an overarching container storage plan. Segregation of dangerous goods is completed in consultation with the stevedores. When cyanide containers are discharged from a vessel, the normal practice is for the containers to be loaded directly on to trucks to remove them from the port. At the port of Lae, PNG ports has a fee schedule in place for dangerous goods that does not allow any free storage time. This assists in minimising the amount of dangerous goods left on the site. In the event that a cyanide container is delayed on the port (e.g., while customs clearance is being completed), 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. These panels are visible to people working in the vicinity of the cargo and serve as notification 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 required to be worn at the port includes: hard hat, safety boots and high visibility shirt/vest. These measures are suitable for the handling of cyanide that is completed at the port of Lae.

Entrances and exits to the site are manned by security guards. There are security guards at the berth face and patrolling the site. There is a fence around the perimeter of the site. CCTV is also used. On the water side, there is a 100 m exclusion zone. Ship tracking is also conducted. Personnel on site carry access identification cards. Visitors to site need to make prior arrangements to gain access.

When cargo is discharged, the stevedores check the security seals against the manifest and discharge paperwork. If the seals do not match, the cargo owner is contacted as are the police and port security. Customs is notified of discrepancies on international cargo.

PNG ports hold a port Safety and Security Meeting three times a year. Attending these meetings are the police, fire brigade, customs, Department of Defence, hospital representatives, ambulance department and stevedores. During this meeting safety and security matters are discussed between the stakeholders, as well as any upcoming changes that are to be implemented (PNGPC 2020c, internet site).

PNG ports work to the requirements of the International Maritime Organization's International Ship and port Facility Security Code.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

PNG has been a member State of the IMO Council since 1976 (IMO 2020, internet site; NMSA 2020a, internet site), it complies with the requirements of the IMDG Code (IMO 2018).

The port of Lae has an emergency management plan in place. The plan identifies three evacuation muster points. Communication is completed through the use of radios. While visitors to site can be identified and accounted for in an evacuation, regular employees cannot be accounted for except through consultation with work mates. 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. If an evacuation is required, access ways are clear as they allow for the entry and exit of heavy vehicles for container transport.

After an emergency response has been completed, whether through an exercise or incident, a debrief is completed to identify positives and weaknesses in the emergency response. The emergency response plan is updated accordingly.

Spill kits are available in the port of Lae. There is also a spill trailer that can be moved around the site.

The NMSA is the competent national authority for PNG.

CONCLUSION

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

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20.0 PORT OF LAEM CHABANG, THAILAND

15 December 2020

20360521-port- 020. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Laem Chabang, Thailand during December 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF LAEM CHABANG

The port of Laem Chabang is situated on the eastern side of the Gulf of Thailand, south east of Bangkok and north of Pattaya, and covers an area of 2,572 hectares. Laem Chabang is Thailand's main deep sea port and currently handles over 1 million Twenty-foot Equivalent Units (TEUs) annually. The port Authority of Thailand governs the activities and operations of the port of Laem Chabang (port Authority of Thailand (PAT) 2020a, internet site).

Thailand's strategic geographical location and close proximity to neighbouring countries such as Myanmar, Laos, Cambodia and Malaysia enables Laem Chabang to act as a gateway port for South East Asia for international trade and goods import. Furthermore, Laem Chabang is well connected to its neighbouring hinterland via a sophisticated network of highways, railways, and waterways.

The port of Laem Chabang consists of several minor ports that provide services including seven container terminals, one multipurpose terminal, one RO-RO terminal, one passengers and RO-RO terminal, one general cargo terminal, and one shipyard terminal. Laem Chabang port can also handle extra large ships (Super Post Panamax) (PAT 2020a, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides, and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Multiple third party stevedoring companies manage the onshore (wharf) operations at the container terminals. Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of sodium cyanide discharged from vessels at Laem Chabang are considered Class 3 Dangerous Goods and allowed to be discharged so long as they are immediately taken to the Dangerous Goods Warehouse. Laem Chabang port does not allow the temporary laydown of Class 3 Dangerous Goods at the terminal under any circumstances.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Thailand's strategic geographical location and close proximity to neighbouring countries such as Myanmar, Laos, Cambodia and Malaysia, enables the port of Laem Chabang to act as a gateway port for South East Asia. The port is well connected to its neighbouring hinterland via a sophisticated network of highways, railways and waterways.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Thailand is an IMO Member State (1973) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1984) (SOLAS 2020, internet site), thereby requiring the port of Laem Chabang to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Control Centre Building organises ship movements, tracks pilotage operations, and supervises terminal operations.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Dangerous goods containers are taken from the vessel and placed into a secure holding facility. Owners of the cargo, or their customs broker, who wish to export the dangerous goods from the port area must comply with Customs Formalities and submit the required documentation prior to the goods being discharged.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is an internationally recognised, comprehensive set of measures aimed at enhancing the security of ships and port facilities. The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through a determination of appropriate security levels and corresponding security measures.

As per Clause 9, 10 and 11 of Ministerial Regulation B.E. 2537 ((1994) Produce, Import, Export or have in Possession Hazardous Substances) the port of Laem Chabang has a dedicated dangerous goods warehouse for the storage of specialised products including sodium cyanide (Chem Linked Consulting Group 2020).

Sodium cyanide transited through the port of Laem Chabang is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. Sodium cyanide is considered a Class 3 Dangerous Goods item and when discharged from a vessel is taken immediately to the Dangerous Goods Warehouse.

All sodium cyanide transited through the port of Laem Chabang remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Thailand has been a member State of the IMO Council since 1973 (IMO 2020, internet site), it complies with the requirements of the IMDG Code (IMO 2018).

The port of Laem Chabang is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The Marine Department, as part of the Ministry of Transport, is the competent authority and lead agency for dealing with pollution by oil and other noxious substances in marine and freshwater environments. The Pollution Control Department of the Ministry of Natural Resources and Environment is responsible for land-based pollution. Although established primarily to set and enforce discharge standards, this department would advise on shoreline clean-up.

Oil companies have developed Tier 1 contingency plans to respond to spills at their facilities and have formed the Industry Environmental Safety Association, an industry cooperative designed to facilitate the movement of resources between companies and locations in the event of an emergency incident.

At Laem Chabang, terminal operators, dangerous goods warehouse operators and other stevedoring service providers must submit emergency response plans to the Laem Chabang port Authority that provide emergency response procedures for events such as: a dangerous goods leak or an accident occurring during handling (Section 28 of the Procedure for Handling Dangerous Goods at Laem Chabang port).

CONCLUSION

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

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21.0 PORT OF MELBOURNE, AUSTRALIA

16 December 2020

20360521-port- 021. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Melbourne, Australia during October 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of the Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF MELBOURNE

The port of Melbourne is the leading international container terminal in Australasia. It handles around 36% of Australia's container trade, and over 2.88 million Twenty-foot equivalent units (TEUs) annually. Overall, the port of Melbourne owns and manages around 500 hectares of port land. The port precinct, with most of its related infrastructure extends west from the Bolte Bridge to the west bank of the Maribyrnong River and south of the West Gate Freeway (M1) around Webb Dock. It is primarily a container port though its multipurpose terminals handle a variety of non-containerised pack types. These include farm equipment and machinery, and breakbulk commodities like timber, paper, iron and steel (port of Melbourne Operations Pty Ltd (PMO) 2020c, internet site).

The port of Melbourne is operated by Victorian ports Corporation (Melbourne) (VPCM). As a government owned entity, VPCM's responsibilities include the management of commercial shipping in port Phillip, waterside emergency and marine pollution response, and the management of Station Pier as Victoria's premier cruise shipping facility (PMO 2020b, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Stevedoring companies DP World, Patrick, Smit Lamnalco and Svitzer manage the onshore (wharf) operations at the various dedicated cargo terminals. Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Unless kept in a restricted area, quantities of dangerous goods exceeding 500 kg are delivered to, and removed from, the designated berth within 12 hrs of being loaded/unloaded from a vessel.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Melbourne's strategic location offers entry to international markets through direct connectivity to Australia's major road and rail networks and international shipping lines.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Australia is an IMO Member State (1952) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port of Melbourne to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Communication operations at Melbourne Vessel Traffic Services (VTS) in the port Operations Control Centre coordinate marine operations. The service operates around the clock to provide safe and efficient marine and navigational services across 101 242 hectares of declared port waters (PMO 2020d, internet site).

VPCM, in consultation with the shipping and export industry, has developed the DG Hub to assist users in reporting their DG information throughout the supply chain. The DG Hub is an efficient, consistent and faster method for transporters to supply their DG data and it assists in streamlining the way users report DG information through the port community. Exporters, packers, transport companies, freight forwarders and shipping lines create and distribute Multimodal Dangerous Goods Forms and vessel DG manifests using the system (Victoria ports Melbourne 2020, internet site).

Chain of custody documentation is also used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In response to the risk of terrorism, the Commonwealth Government of Australia has interpreted the International Ship and port Facility and Security (ISPS) Code, through its introduction of the Maritime Transport and Offshore Facilities Security Act (MTOFSA) and Regulation 2003. The port of Melbourne is a security regulated port as set out in the MTOFSA.

To fulfil regulatory requirements, the port of Melbourne has an approved Maritime Security Plan (MSP) which excludes Station Pier as VPCM has its own Station Pier MSP.

A person must be nominated in writing by the cargo terminal hirer, shipping agent or ship's Master, as an approved person to enter the cargo terminal area of Station Pier. This includes international seafarers.

Worksafe Victoria's (2020) *Code of Practice for the Storage and Handling of Dangerous Goods* provides guidance for spill containment requirements for dangerous goods storage facilities/areas. Occupiers storing and handling dangerous goods must ensure that in each area where dangerous goods are stored or handled, provision is made for spill containment that will eliminate the risk from any spill or leak of solid or liquid dangerous goods and must also be able to contain within the premises, the dangerous goods that have been spilled or leaked and any solid or liquid effluent arising from an incident.

Unless kept in a restricted area, quantities of dangerous goods exceeding 500 kg are delivered to, and removed from, the designated berths or storage areas within 12 hrs of being loaded/unloaded from a vessel. Sodium cyanide transited through the port of Melbourne is temporary and remains on site for less than 12 hours, as required. This is a management measure to minimise potential for accidental releases during storage. All sodium cyanide transited through the port of Melbourne remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Melbourne is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

AMSA, a federal government self-funded maritime safety agency established in 1990, is responsible for providing a national response capability for marine pollution. AMSA administers the National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances, a cooperative arrangement between the Federal, State and Northern Territory (NT) Governments and the shipping, oil, exploration and chemical industries, emergency services and fire brigades.

Under National Plan arrangements, a wide strategic range of response equipment is held at nine regional stockpiles. Equipment provided by AMSA is generally targeted at larger spills, though this is complemented by equipment held by port authorities, State Governments and individual oil and chemical companies.

The port of Melbourne has a plan in place to manage emergencies which is the port of Melbourne Safety and Environment Management Plan (SEMP) (PMO 2020a, internet site). The SEMP provides an integrated framework for emergency management within the port's areas of responsibility and seeks to support an "all agencies" and "all hazards" approach for the prevention, preparedness, response and recovery of port related emergencies. The SEMP is also required to be integrated with VPCM's Melbourne port Emergency Management Plan.

CONCLUSION

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

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22.0 PORT OF MOMBASA, KENYA

12 October 2020

20360521-port- 022. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Mombasa, Kenya during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF MOMBASA

The port of Mombasa is managed by the Kenya Port Authority (KPA). Established in January 1978 under an Act of Parliament, the KPA is authorised to manage and operate the port of Mombasa and all scheduled seaports along Kenya's coastline. In addition, the Authority manages inland waterways as well as inland container depots at Embakasi, Eldoret and Kisumu (Kenya Ports Authority (KPA) 2021a, internet site).

The port of Mombasa is the gateway to East and Central Africa, and is one of the busiest ports along the East African coastline. The port provides direct connectivity to over 80 ports worldwide and is well connected by road to a vast hinterland comprising Uganda, Rwanda, Burundi, Eastern Democratic Republic of Congo, Northern Kenya, Southern Sudan, Somalia and Ethiopia. A railway line also runs from the port into Uganda and Kenya (KPA 2021a, internet site).

The port of Mombasa has two container terminals, the Mombasa Container Terminal and the Kipevu Container Terminal with a total annual capacity of approx. 1.65 million TEUs. Container operations at the port of Mombasa entail discharging and loading of vessels, stacking and unstacking of containers in the yard and delivery/receipt of import and export containers (KPA 2021b, internet site).

Port operations include:

- A Harbour Master oversees the operation of the overall port operations.
- Port protocols exist for docking of vessels, e.g., use of Pilots; use of tug boats; different weather conditions, tides, currents; safety; and general port operations. This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once the vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of dangerous goods discharged by vessels at the container terminal are moved to a dedicated dangerous goods storage area within the port confines for storage until customs clearance has been completed and transport is arranged. Containers of Cyanide are segregated from other classes of dangerous goods. This area has minimal traffic flow and is large enough to allow space for appropriate segregation of different classes of dangerous goods.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The Mombasa port is the principal port of Kenya and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Kenya is an IMO Member State (1973) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1999) (SOLAS 2020, internet site), thereby requiring the port of Mombasa to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

As a member of the IMO and to comply with the IMDG Code and the Kenya Ports Authority Act, 2012 vessels are required to declare dangerous cargo before arriving at or leaving the port.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

The Container Operations Department at Mombasa operates 24/7 and utilises a Terminal Operations System (TOS) to track both containers and their documentation.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The KPA has responded positively to pressure from the international community by taking steps to increase the level of security checks and supervision in all sectors of its port operations. The Authority is determined to ensure that its ports comply with the security rules of the IMO.

Mombasa introduced a number of measures to make the port a safer and more secure place. They include:

- New electronic surveillance equipment including CCTV
- Coastguard surveillance of waters
- New search and rescue centre, set up jointly with the IMO
- More plain-clothes and uniformed security officers on patrol in port areas
- Strict controls on port entry with all port users and visitors required to display passes at all times
- Restricted entry to container terminal and other key sections
- Continuously manned watch towers in car handling area and container terminal
- New rapid response team to deal with urgent security matters in or near the port area
- New centralised verification areas at the container terminal
- New cargo scanning system to allow containers to be checked without stripping.

Upon arrival, inbound containers are discharged from vessels and taken by truck or tractor to a designated CFS. Each CFS is a self-contained facility with government agencies on site, including Customs, police, the Standards Authority and a sanitary inspection department. Each container awaiting clearance for on-carriage resides securely within a given CFS until cleared.

Cyanide is placed in a segregated area whilst awaiting relevant clearances. This area is clearly signed providing appropriate warning to all port personnel. Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. Additionally, signage is displayed prohibiting smoking and the consumption of foodstuffs and liquids in the areas where hazardous goods are being stored.

The port of Mombasa 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 which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage may be subject to an additional security presence. The port security egress checkpoint checks a driver’s documentation to ensure approval has been granted for the removal of the container, that the container number physically matches with the documentation and that the seal is intact on the shipping container.

The port has a minimum standard of personal protective equipment required 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 sealed within containers at all times.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Kenya has been a Member State of the IMO Council since 1973, it complies with the requirements of the IMDG Code.

The port of Mombasa is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The port of Mombasa maintains permanent onsite fire and emergency response personnel and equipment. The Port Fire Services (PFS) are well equipped and operate three fire engines with a water capacity of 10,000 L each and has a water reserve of 300,000 L. Working with external bodies, the PFS responds to rescues, hazardous materials incidents and possible emergency activities both within the port and across the greater region. They offer fire and rescue services to enhance community safety, quality of life and confidence in port operations by minimising the impact of hazards and emergency incidents on port users, the environment and the economy.

The PFS also offer 24/7 ambulance services and emergency response. Manned by firefighters, the ambulance is used as a first responder in serious medical emergencies.

CONCLUSION

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

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23.0 PORT OF MONROVIA, LIBERIA

27 January 2021

20360521-port- 023. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Monrovia, Liberia during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF MONROVIA

The port of Monrovia (also referred to as the Freeport of Monrovia) is a landlord port that has concessions partnerships with APM Terminals, Firestone, China Union and Western Cluster. It is currently the largest port in Liberia. APM Terminal operate the main quay which has one container berth of 200 m length at 12.5 m deep. The port has one reach stacker and four forklifts. The main storage area in the Terminal is the yard for the containers which is around 10 hectares (APM Terminals 2021a, internet site).

APM Terminals Liberia operates one dedicated berth for container operations, in addition to its one multi-use berth. Seven reachstackers, two empty handlers and two heavy duty forklifts for containers loading or collection of containers. There is a three-lane, automated in gate, and a separate three-lane out gate (APM Terminals 2021b, internet site).

The Freeport of Monrovia is an International Ship and Port Security (ISPS) certified Security Level One port. The Terminal security has been enhanced in the last years. The security services are subcontracted by APMT and there is ongoing project to install CCCTV in the port to monitor all movements. APM Terminal ensures adequate lighting during the night which helps in increasing the security standards in the Terminal. To note that the APM Terminal uses its own generators for electricity and is not linked to the national grid (Logcluster 2021, internet site).

Under current rules provided by APM Terminals transhipment or import IMDG Class 6.1 is authorised under restrictions including request prior to loading at port of departure and containers are to be transported outside of the port upon discharge.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Liberia is an IMO Member State (1959) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

As an IMO Member State and to comply with the IMDG Code, vessels are required to declare dangerous cargo before arriving at or leaving the port. Additionally, and regarding the carriage of dangerous goods, *Regulation 106 (1) and (2)* requires the owner, master or agent of a vessel carrying dangerous goods, as defined in the IMDG Code, to provide written notification to the Port Operations Manager at least 72 hours prior to arrival of the vessel; and, the notification is to provide full particulars, correct technical name as required by *Regulation 4.1 of Part A of the SOLAS* Convention, dangerous goods class and UN number, the number of packages and mass of such dangerous goods that fall within any of the categories listed in the IMDG Code.

Dangerous goods delivered to or from the port of Monrovia are required to be appropriately manifested, packaged, labelled and placarded. Documentation that accompanies the cyanide throughout transportation by sea and delivery at ports includes emergency response information along with the dangerous cargo manifest, packing certificates and Multimodal Dangerous Goods Form.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

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

As a member of the IMO and to comply with the International Maritime Solid Bulk Cargoes Code (IMSBC) and IMDG Codes, vessels are required to declare dangerous cargo to the Port Operations Manager before arriving at or leaving the port. All cargo listed on the dangerous cargo manifest must be stowed and handled as prescribed by its UN number and dangerous goods class.

Cyanide product remains sealed within containers preventing contact with water and other incompatible materials.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As noted previously, under current rules provided by APM Terminals the transhipment or import of IMDG Class 6.1 products is authorised under restrictions.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The product transferred through the port is solid cyanide within intermediate bulk containers (IBCs) and within a shipping container, the containers remain sealed which significantly reduces the potential for a cyanide release scenario. There are no storage facilities at the port of Monrovia for cyanide containers. Where authorisation for import is granted containers must be transported outside of the port operational area upon discharge.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Liberia has been a member State of the IMO Council since 1962, it complies with the requirements of the IMDG Code. The product transferred through the port is solid cyanide within IBCs and within shipping containers, the containers remain sealed which significantly reduces the potential for a cyanide release scenario and the product must be transported out of the port operational area upon discharge.

Accordingly, it is considered likely that Orica will need to provide technical assistance, advice and potentially deploy resources in the unlikely event of that a cyanide release scenario occurs at the port.

CONCLUSION

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

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24.0 PORT OF NOUAKCHOTT, MAURITANIA

27 January 2021

20360521-port- 024. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Nouakchott, Mauritania during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF NOUAKCHOTT

The port of Nouakchott is the main port in Mauritania accounting for approximately 96 % of all annual port traffic. It is located near the West African Atlantic coast and was developed as the capital of Mauritania after it gained independence in 1960. In the past Mauritania lay on one of the most lucrative trade routes in West Africa (Bolloré Ports 2021, internet site).

Nouakchott port is an import port representing approximately 90 % of all annual imported goods, approximately 1.5 million tonnes, these goods include wheat, cement, clinker, flour, sugar, semolina, milk and general equipment. Exports include plaster from Samia, Mauritania's main producer, animal skins and fish (Findaport 2021, internet site).

The port of Nouakchott consists of two quays, one for small vessels (Wharf Quay) with draft less than 5 m and a second quay for larger vessels with a maximum draft of 10.3 m, this quay stretches 585 m and is split into four berths, three of which are used for cargo handling and the fourth for servicing vessels. The main cargo quay is located 4 km south of the Quai Wharf and 15 km south-west of the city of Nouakchott.

Nouakchott uses an integrated AS400 computer system developed in co-operation with the Office d'Exploitation des Ports Marocains (ODEP). This offers management transparency and enhances the quality of service offered to international customers.

The Autonomous Port of Nouakchott, called PANPA for short, manages the port.

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.
- The stevedoring service providers manage the onshore (wharf) operations at the dedicated container terminal.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Nouakchott is advantageously located at the crossroads of the routes connecting Africa, Europe and America, and is one of the leading public commercial ports in the south Sahara for ships sailing from Europe.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Mauritania is an IMO Member State (1961) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1997) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Port stevedores receive the vessels manifest on arrival which includes details on the containers for unloading. This information is then captured in the stevedore's management systems which assists with the location where each container from the vessel is to be placed after unloading, for Nouakchott this is generally onto onward forms of transportation. Where temporary storage is required transport from the unloading berth to the interim storage facility is controlled by documentary checks which use the container's tracking details and acknowledge its contents.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

A limited quantity of product is transported via the port of Nouakchott and this is dictated by a specific customer's needs (individual orders). Express clearance is performed by the importer and containers are generally collected on arrival for onward transportation to the customer site. In the event that a delay occurs, the containers are transferred to a holding site and a security presence is provided. Security personnel are provided with equipment suitable to meet minimal personnel protective equipment requirements and the provision of warning signage prohibiting unauthorised personnel in the area.

The area in which containers are located, if warranted, is well segregated and ventilated to prevent the build-up of hydrogen cyanide gas.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Mauritania has been a member State of the IMO Council since 1961, it complies with the requirements of the IMDG Code.

The port of Nouakchott is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The Ministry of Transport (MOT), Direction of Merchant Navy is the competent authority and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

The MOT, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available at the port.

CONCLUSION

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

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25.0 PORT OF PUERTO ANGAMOS, CHILE		27 January 2021
		20360521-port- 025. RevA
Author: Craig Currie	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Puerto Angamos, Chile during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF ANGAMOS

Puerto Angamos is located in the heart of the mining region of Chile, in the commune of Mejillones approximately 1,400 km from Santiago and only 65 km from Antofagasta (Puerto Angamos 2021, internet site).

The port is situated close to the most important copper district in the world, where there are several world-renown mining operations such as Chuquicamata, Escondida, Spence, Radomiro Tomic, El Abra and El Tesoro, among others. Angamos has fast access by train and truck connecting the main mining operations of Chile, Argentina and Bolivia, with the port without the need to cross through densely populated areas (Puerto Angamos 2021, internet site).

The port has a multi-purpose, mono-operated terminal with four berths, maximum draft is 13.7 metres and there is capacity to receive ships of up to 155 thousand tonnes of displacement and 366 metres in length. Extensive storage capacity exists on site for containers, general/special cargo and bulk goods, as well as good interconnectivity options for transhipment via rail or road.

The Bay of Mejillones offers natural protection that provides exceptional conditions for most of the year against the tides coming from the south of the country. Meanwhile, its deep waters ensure availability to larger vessels and the ability to work safely.

Containers of dangerous goods discharged by vessels at the terminal are currently placed directly onto onward forms of ICMI accredited transportation and removed from the port area.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Chile is an IMO Member State (1972) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

The port of Puerto Angamos aims to have dangerous cargo placed directly onto a trailer and removed from the facility via an ICMI certified transporter, and under escort of the Port Authority. However, when this cannot occur, the port has a dedicated storage area for specialised products including dangerous goods; cyanide containers are segregated and stacked separately according to the provisions of the Code and all sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Puerto Angamos is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

Responsibility for marine pollution rests with the Department for Territorial Waters and Merchant Marine (DGTMMM), a branch of the Chilean Navy. Responsibility is delegated to 16 Maritime governing regions and to the 57 Captains of the Port located at the main ports. The Chilean National Contingency Plan embodies five Regional Contingency Plans covering the entire length of the Chilean coastline. Each region has a Coordination Centre.

The responsibility for Hazardous and Noxious Substance (HNS) response would fall to the DGTMMM and would follow the same procedures as oil spill response. A national contingency plan for HNS incidents is currently being drafted by the authorities. Some private port facilities already have approved contingency plans for HNS on a local and regional scale. Available oil spill response equipment would also be used for HNS incidents.

CONCLUSION

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

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26.0 PORT OF PUERTO DESEADO, ARGENTINA

12 October 2020

20360521-port- 026. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Puerto Deseado, Argentina during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF DESEADO

Located on the southern Patagonia coast of Argentina, Puerto Deseado is the capital of the Santa Cruz province. Puerto Deseado is situated on the estuary at the mouth of the Deseado River and is a multi-purpose port facility handling fish, container and general cargo (World Port Source 2021, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.

- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Stevedoring is undertaken by third-party contractors.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel’s manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica’s *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that “the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica’s *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Argentina is an IMO Member State (1953) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1979) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

The port of Puerto Deseado operates under a suite of International and National regulations that ensures its compliance with regards to the handling and storage of dangerous goods. *PNA Regulations No.9/97 Transport by vessels of dangerous goods, safety standards for transport by charcoal vessels* and *No.3/96 Standards for the approval of packaging and packaging containing dangerous goods* outline the requirements for ports.

Sodium cyanide transited through the port of Puerto Deseado is temporary and remains on site for less than a day. This is a management measure to minimise potential for accidental releases during storage. All sodium cyanide transited through the port of Puerto Deseado remains sealed in containers at all times preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Argentina has been a member State of the IMO Council since 1953, it complies with the requirements of the IMDG Code.

The PNA is the competent authority (specifically the Directorate for Environmental Protection) and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments. The PNA consists of two branches; one section deals with policy and implementing the international Conventions; the other has an operational role and is responsible for planning and responding to pollution incidents. This department has 19 Rescue, Firefighting and Environmental Protection stations located in Argentina's principal ports.

The port of Puerto Deseado is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The PNA, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment). The PNA is currently engaged in a programme of training and exercises in preparation for spills of both oil and HNS.

PNA Regulation No.05-11 Obligatory Training Standards for Land Personnel Linked to Maritime, Fluvial and Hazardous Goods Shipping ensures minimum standards of preparedness and response are maintained.

CONCLUSION

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

REFERENCES

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27.0 PORT OF PUNTAS ARENAS, CHILE

27 January 2021

20360521-port- 027. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Puntas Arenas, Chile during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF PUNTAS ARENAS

The port of Punta Arenas is located in Southern Chile, in the XII Region on the border of the Magellan Strait, in the basin of the Río de las Minas. The port of Punta Arenas is operated by Empresa Portuaria Austral which is a Chilean Government Enterprise (World Port Source 2021, internet site).

Port activity has declined, due in part to the opening of the Panama Canal, whilst more recently the greater autonomy of the new ships that operate in the region. Notwithstanding, new activities, such as offshore oil exploration, industrial fishing, scientific activities oriented towards the Antarctic continent and the attraction of Patagonian nature as a destination for tourist cruises have seen a resurgence in activity.

In Chile, port governance is influenced by a wide number of stakeholders – more than 30 organisations deal with the regulation of the port system. The main entities likely to generate or influence port policies include five ministries, these being: The Ministry of Transport and Telecommunication, The Ministry of Public Works, The Ministry of Defence, The Ministry of Finance and The Ministry of National Assets.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Chile is an IMO Member State (1972) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

The port of Punta Arenas aims to have dangerous cargo placed directly onto a trailer and removed from the facility via an ICMI certified transporter, and under escort of the Port Authority. However, when this cannot occur, the port has a dedicated storage area for specialised products including dangerous goods; cyanide containers are segregated and stacked separately according to the provisions of the Code and all sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

The port has full CCTV coverage, is fully lit at night and the whole of the port area has controlled access.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Punta Arenas is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

Responsibility for marine pollution rests with the Department for Territorial Waters and Merchant Marine (DGTMMM), a branch of the Chilean Navy. Responsibility is delegated to 16 Maritime governing regions and to the 57 Captains of the Port located at the main ports. The Chilean National Contingency Plan embodies five Regional Contingency Plans covering the entire length of the Chilean coastline. Each region has a Coordination Centre, Punta Arenas is one such centre.

The responsibility for Hazardous and Noxious Substance (HNS) response would fall to the DGTMMM and would follow the same procedures as oil spill response. A national contingency plan for HNS incidents is currently being drafted by the authorities. Some private port facilities already have approved contingency plans for HNS on a local and regional scale. Available oil spill response equipment would also be used for HNS incidents.

CONCLUSION

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

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28.0 PORT OF ROCKHAMPTON (FORMERLY PORT OF ALMA), AUSTRALIA

22 October 2020

20360521-port- 028. RevA

Author: Sara Pritchard Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Rockhampton, Australia (formerly known as port of Alma) during October 2020 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of the port for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF ROCKHAMPTON

The port of Rockhampton (formerly known as port of Alma) is located 61 km south east by road from Rockhampton, Queensland, on the southern end of the Fitzroy River delta. The port is managed by the Gladstone ports Corporation (GPC), a statutory Queensland Government-owned corporation who maintain the dredging, security, berths and operations at the port. The principal cargoes handled are class 1 explosives, ammonium nitrate, bulk tallow and military equipment for exercises held regularly at Shoalwater Bay to the north of Rockhampton (GPC 2020a). The port is a natural deep water harbour that accommodates vessels up to 180 m in length and has a total storage area of 140 ha (MSQ 2020).

The port has three berths, two for general cargo operations and one dolphin berth for the handling of bulk liquids (tallow and fuel cargoes). Suitable infrastructure is available for the handling of containers. In the 2018-19 financial year, the port of Rockhampton handled 222.2 kilotonnes of cargo, with 49 vessels passing through the port. Ammonium nitrate throughput accounted for 57.8 per cent of the total port tonnes in 2018-19. Other commodities included petroleum, explosives, tallow, salt container cargo and general cargo (GPC 2020a, internet site).

Shipping legislation in Queensland is controlled by Maritime Safety Queensland (MSQ), a state government agency attached to the Department of Transport and Main Roads (MSQ 2020). GPC is responsible for the management of dangerous goods in the port, including the loading and unloading of ships alongside and movement across the wharf. MSQ is responsible for monitoring and managing the safe movement of ships in Queensland waters.

Port operations include:

- Port protocols and procedures are in place for docking of vessels at the port (e.g., use of Pilots and tugboats, management of weather conditions, tides, currents and safety, and general operations of the port). This sees to the safe docking and turnaround of vessels in and out of the port.
- Port entry is controlled by the Pilot who understands the port protocols and any unique issues regarding the approach and docking of vessels at the port. The Ship’s Captain works in conjunction with the Pilot as they understand the vessel and can implement and assist with the Pilot’s instructions.
- The approach of a vessel to the port will consider channels, navigation points, currents, tides and weather.
- Once a vessel is secure alongside the wharf, the shipping activities changeover to port activities. The vessel’s manifest of what containers are required to be unloaded, including the manifest for containers for loading are handed over. This manifest identifies hazardous cargos and their United Nations (UN) number, classification, and segregation requirements.

Third party stevedores manage the onshore (wharf) operations at the container terminal. Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel’s manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica consider the ports and their extended infrastructure 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 point of origin to destination.

Orica’s *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that “the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The port of Rockhampton is in close proximity to well established primary industries, including mining, milling, bulk production, processing and manufacturing. It is the leading transhipment point for trade and resources into the region. While no rail connection currently exists, the port is well connected for onward transport via road.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Australia is an IMO Member State (1952) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port of Rockhampton to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

MSQ, through the authority of the Harbour Master, has jurisdiction over the safe movement of all shipping within the pilotage area. The Regional Harbour Master controls the movement of vessels within the port, whilst the allocation of berths and moorings is controlled by GPC (GPC 2020b, internet site).

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets.

Section 11 (Dangerous Cargo) of the *port Procedures and Information for Shipping, port of Alma* (MSQ 2020) outlines the duties of owners and masters of vessels in relation to the *Marine Order 41 – Carriage of Dangerous Goods* (Australian Maritime Safety Authority [AMSA] 2020a, internet site). The regulations require that ships carrying dangerous goods must comply with the appropriate directions of the IMDG code (IMO 2018) and Australian Standard (AS) 3846-2005 *The Handling and Transport of Dangerous Cargoes in port Areas* (Standards Australia 2005) and are to notify GPC of the intent to bring dangerous cargo into or depart from a pilotage area.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Cyanide transited through the port of Rockhampton is temporary and remains on site for a short period of time. This is a management measure to minimise potential for accidental releases during storage. All sodium cyanide transited through the port of Rockhampton is segregated and always remains sealed within containers preventing contact with water and other incompatible materials. GPC has secure container yards available for use. These areas are concreted, secured via a perimeter fence and under floodlights at night.

In general, port and vessel security are managed through the International Ship and port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities, regulated by the *Maritime Transport and Offshore Facilities Security Act, 2003* (Australian Government 2012).

GPC has an approved Maritime Security Plan as required under the *Maritime Transport and Offshore Facilities Security Act, 2003*. A ship's master, prior to entering the port of port Alma, must report directly to the port authority or via their respective ship agency the following (MSQ 2020):

- ISPS Code compliance number
- Current ship security level or any change to the ship security level whilst in the port
- List of expected visitors/contractors
- Nominated stevedore
- Crew list and identification
- Any security incident (as defined under the ISPS Code or maritime transport security legislation) whilst in port.

The *Maritime Transport and Offshore Facilities Security Act and Regulations 2003* also requires the establishment of maritime security zones in and around the port and wharf facilities as part of maritime security plans. These regulated zones have been established at the port of Rockhampton and place restrictions and limitations on who may enter both land and marine side restricted zones.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Rockhampton is certified under the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC 90) (United Nations 1995). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

AMSA, a federal government self-funded maritime safety agency established in 1990, is responsible for providing a national response capability for marine pollution. AMSA administers the intergovernmental agreement on the *National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances,* a cooperative arrangement between the Federal, State and Territory Governments and the shipping, oil, exploration and chemical industries, emergency services and fire brigades (AMSA 2020b, internet site).

MSQ's emergency procedures are prepared under the provisions of the *Transport Operations (Marine Safety) Act 1994* (i.e. *Transport Operations (Marine Safety) Regulation 2016* (Queensland Government 2017)) and the *Transport Operations (Marine Pollution) Act 2008*. GPC has published an emergency response plan for the port of Rockhampton which details the required response to an emergency within the port (MSQ 2020). All emergencies are reported via VHF channel 13, which activates the emergency response plan and notifies the appropriate emergency response service. Section 12 (port Safety) of the *port Procedures and Information for Shipping, port of Alma* (MSQ 2020) provides guidance to the port community and Maritime Safety Queensland's personnel in the response procedures in the event of dangerous incidents, emergencies and disasters.

CONCLUSION

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

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29.0 PORT OF SANTOS, BRAZIL		12 October 2020
		20360521-port- 029. RevA
Author: Craig Currie		Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Santos, Brazil during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SANTOS

The Port of Santos is the largest in Latin America. Connecting over 600 ports in 125 countries. In 2018, the port was responsible for processing 133 million tons of cargo and 4.1 million TEUs, generating USD 250 million in revenue. Primary hinterland comprises 5 states representing 67% of Brazil's GDP (Santos Port Authority 2021a, internet site).

Santos is the most important foreign trade route in Brazil. Almost 27% of the country's trade balance (USD 112.3 bi) passes through the port. It is also the 39th largest container port on Lloyd's Top 100 list (the second largest in Latin America, and the only Brazilian port on the list) (Santos Port Authority 2021a, internet site).

Santos Port Authority is the institution responsible for managing the public port, its operations and surveillance. The company is currently undergoing a major turnaround, bringing more efficiency, transparency and competitiveness. The goal is to prepare for privatisation, a process that was triggered in August 2019 and should be concluded in the next years (Santos Port Authority 2021a, internet site).2018 Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.

- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

The stevedoring services are provided by private third party companies. They manage the onshore (wharf) operations at the dedicated container terminals.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Brazil is an IMO Member State (1963) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

When cargo is discharged, the stevedores check the security seals against the manifest and discharge paperwork. If the seals do not match, the cargo owner is notified. Clerks match up paperwork with what has been discharged against the vessel manifests.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Relevant warning signage is provided at the port of Santos. Containers are placarded in accordance with the requirements of the IMDG Code labelling requirements displaying the relevant warning and safety detail.

Sodium cyanide is not stored at the port of Santos. Containers on arrival, after appropriate customs and country relevant quarantine clearances, are collected by the transport organisation operating on behalf of the end destination user and transported under suitable convoy conditions.

Whilst containers of sodium cyanide are in the port environs, temporary signage is provided warning that smoking, open flames and eating or drinking in the vicinity are prohibited. Containers on arrival and awaiting clearances are held in the open with relevant segregation to prevent the possible build-up of hydrogen cyanide gas. A windsock is located in the area to provide wind direction information.

Mandatory personal protective equipment requirements are in place at the port of Santos which require the wearing of protective footwear, appropriate clothing with high visibility capability and safety helmet in specific areas. Personal protective equipment requirements are covered under the port's basic induction processes.

Port management regularly conduct spot checks on ports areas for compliance of personal protective equipment standards.

The port of Santos is ISPS (International Ship and Port Security) certified. The port has its own security procedures in place with a 24-hour, 7-day security presence.

On collection of shipping containers from the port after clearances have been completed, drivers are required to produce their documentation at the port security checkpoint for cross checking by security personnel prior to leaving the port.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Santos is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The Federal Environmental Agency is the competent authority and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

Environmental Law No. 9966 establishes the national rules regarding oil spills and other harmful substances. This law requires each privately operated terminal to formulate an Individual Emergency Program (Programa de Emergência Individual – PEI) that is fit for the individual demands and cargo requirements. This program seeks to provide a quick response in case of accidents, protecting both the environment and the port facilities.

The Federal Environmental Agency, with the support of private operators, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment).

CONCLUSION

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

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30.0 PORT OF SHANGHAI, CHINA

27 January 2021

20360521-port- 030. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Shanghai, China during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SHANGHAI

The port of Shanghai is situated in the middle of the Chinese coastline, where the Yangtse River flows into the sea. It is the meeting point in the T-shaped waterway network composed by the east-west Yangtse River and the north-south coastline and is also China's largest multi-purpose port and one of the country's most important gateways for foreign trade (World Port Source 2021, internet site).

The port of Shanghai is composed of multiple port areas which are designated as follows:

- The shore of Huangpu River: such as Zhanghuabang, Jungong Road, Gongqing, and Longwu port areas etc.
- The south shore of Yangtze River: such as Baoshan, Luojing, and Waigaoqiao port areas etc.
- Hangzhou Bay: Yangshan port Area.

The container terminals are located at Yangshan, Waigaoqiao, and Wusong with a total of 46 berths. Yangshan, Waigaoqiao, and Wusong port areas are inter-connected via fast waterway and road transportation. Yangshan and Waigaoqiao are the primary terminals of the Shanghai port. The main cargos handled by the port include food, coal, timber, metal ore, petroleum and its products, steel, mining materials, machinery and equipment and bulk groceries.

Shanghai International Port (Group) Co Ltd (SIPG) is the primary operator of the port of Shanghai providing port-related services ranging from stevedoring and storage to ancillary and extended services such as logistics and financing.

The port of Shanghai also serves as a container transhipment hub for ports in the Yangtze River Delta, as well as in Japan and South Korea.

In addition to stevedoring services, the port of Shanghai provides assorted port services for containers, including short-term and specialised storage for non-standard goods, such as frozen perishables or hazardous substances.

China is a Category A member of the International Maritime Organization (IMO) Council and a signatory to the Tokyo MoU, and as such performs its Port State obligations, supervises foreign ships in Chinese waters, and promotes compliance with international conventions among Flag States through Port State Control (PSC) (UFSOO 2021, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Shanghai is situated in the middle of the Chinese coastline. Internally, waterways, road, and railway transportation networks are conveniently located to the Shanghai port. The transport networks stretch to the Yangtze River Basin and even the whole country. Externally, the port is close to the global routes. It is serviced by shipping companies that have routes to over 200 countries.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

China is an IMO Member State (1973) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1980) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Shipping containers containing composite intermediate bulk containers (IBCs) are placarded in accordance with the IMDG Code labelling requirements displaying relevant warning and safety information including the environmentally hazardous substance label. Signage prohibiting smoking, open flames and eating and drinking are in place, as well as PPE requirements.

The port of Shanghai has a dedicated dangerous goods transit area for dangerous goods awaiting loading to arriving vessels. Appropriate signage, as outline in 1.5, is displayed in this area. The port operations for dangerous goods are registered and licensed by the government. The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

The port is listed on the International Ship and Port Facility Security (ISPS) site as accredited. An electronic card access system is in place to enable only authorised access to the port area. Containers departing the port are checked against documentation for matching container numbers and product detail.

All sodium cyanide transited through the port of Shanghai remains contained within its sealed containers at all times and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. The area where the containers are placed is considered suitable to contain effectively any spillage that may happen.

The port took several measures to enhance the management of dangerous goods, such as the followings:

- Inspecting the licenses of operators and equipment

- Inspecting and replenishing the emergency supplies
- Inspecting and maintaining the fire protection equipment, CCTV, and fence for dangerous goods
- Training staff involving dangerous goods on emergency equipment using, and
- Conducting emergency drills.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

China has been a member State of the IMO Council since 1973, it complies with the requirements of the IMDG Code.

The port of Shanghai is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The port of Shanghai has facility specific emergency response plans indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods. According to the 2015 Sustainable Development Report of SIPG, the port has arranged emergency drills on emergency equipment usage and dangerous goods leakage for all related operating personnel and administrative staff.

Dangerous goods are stored in the Yangshan port area. Yangshan port has an established emergency management committee to manage emergency related issues, such as establishing emergency response plans, conducting regular emergency drills, assessing and controlling the risks associated with handling dangerous goods and preparing emergency supplies. The Safety Production Supervision and Administration Bureau of Shanghai Municipality reviews emergency response plans to ensure they are in compliance with statutory requirements.

The MSA is responsible for the co-ordination of response to HNS at sea. A National Contingency Plan for Hazardous and Noxious Substance incidents exists as an extension of the National Oil Spill Contingency Plan.

CONCLUSION

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

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31.0 PORT OF SUDAN, SUDAN

28 January 2021

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Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Sudan port, Sudan during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SUDAN

The Port of Sudan is located at Port Sudan on the east coast of Sudan on the Red Sea. The Port of Sudan is the country's main seaport and has four terminals (Logcluster 2021, internet site):

- North Quay has 12 Berths with total length of 1,866 m.
- Green Harbour Terminal that has 4 berths with a total length of 1,226 m, the Green Harbour is a multi-purpose terminal that can handle container cargo.
- Container Terminal (South Quay) has six berths with total length of 1,545 m and the berths 17 and 18 in the old container terminal are equipped with four ship to shore gantry cranes and 15 rubber-tired gantry cranes (RTGs), the new berths 13 and 14 are equipped with four ship to shore gantry cranes and eight RTGs.
- Alkhair Terminal for oil products.

The Container Terminal also has mobile quay cranes (2) and forklifts for (44) for handling full and empty containers. There is a dedicated 85,000 m^2 area for the storage of dangerous goods and unclaimed cargo. The container terminal was upgraded in 2011 and increased capacity by 700,000 TEU to 1.2 million TEU. The Port has also established and inland container depot (ICD) at Salloum approx. 18 km south west of the port and is located close to the main highway and railway.

The Sea Ports Corporation (SPC) is the port authority for the Port of Sudan. The SPC is an independent Sudanese maritime body responsible for the building, development and maintenance of the country's ports, harbours and lighthouses (Logcluster 2021, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Sudan is both an International Maritime Organization (IMO) Member State (1974) and Safety of Life at Sea (SOLAS) Signatory Nation (1990), thereby requiring the port of Sudan to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the International Maritime Dangerous Goods Code (IMDG Code) (Parts 4, 5 and 7) and SOLAS Convention ((1974) Chapter 7).

As an IMO Member State and to comply with the IMDG Code, vessels are required to declare dangerous cargo before arriving at or leaving the port. Additionally, and regarding the carriage of dangerous goods, *Regulation 106 (1) and (2)* requires the owner, master or agent of a vessel carrying dangerous goods, as defined in the IMDG Code, to provide written notification to the Port Operations Manager at least 72 hours prior to arrival of the vessel; and, the notification is to provide full particulars, correct technical name as required by *Regulation 4.1 of Part A of the SOLAS* Convention, dangerous goods class and UN number, the number of packages and mass of such dangerous goods that fall within any of the categories listed in the IMDG Code.

Dangerous goods delivered to or from the port of Sudan are required to be appropriately manifested, packaged, labelled and placarded. Documentation that accompanies the cyanide throughout transportation by sea and delivery at ports includes emergency response information along with the dangerous cargo manifest, packing certificates and Multimodal Dangerous Goods Form.

Port operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each hazardous cargo transport units loaded onto the ship at the port of origin. All cargo listed on the dangerous cargo manifest must be stowed and handled as prescribed by its UN number and dangerous goods class. Cyanide product remains sealed within containers preventing contact with water and other incompatible materials.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port Authority organises ship movements, tracks pilotage operations, and supervises terminal operations. SPC provides all ships at the port of Sudan with their own security and gangway watch. The port is fenced, access controlled, and customs bonded so that cargo cannot enter or leave the port without the required customs and associated documentation being completed and approved through customs control.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The product being transferred through the port is solid sodium cyanide within intermediate bulk containers (IBCs) and within a shipping container, the containers remain sealed which significantly reduces the potential for a cyanide release scenario. Storage facilities at the port of Sudan consist of an 85,000 m^2 open storage for dangerous goods at the South Quay container terminal. Storage in transit may occur in the event that receipt at the port is delayed. Cargo handling and storage services are provided at the port using modern equipment and staff 7 days a week, 24 hours a day. The ISPS "International Ship and Port Facilities Safety Code" is implemented and security and access control are provided at the port including controlled access points and perimeter security.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Sudan has been a member State of the IMO Council since 1974, it complies with the requirements of the IMDG Code. The Sudan Sea Ports Handbook indicates SPC have developed contingency plans for emergency response to minor and major incidents including the prompt response to control resultant contamination. The product being transferred through the port is solid sodium cyanide within IBCs and within a shipping container, the containers remain sealed which significantly reduces the potential for a cyanide release scenario. However, it is considered likely that Orica would need to provide technical assistance, advice and potentially deploy resources in the event that a cyanide release scenario occurs at the port.

CONCLUSION

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

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32.0 PORT OF SURABAYA, INDONESIA

28 January 2021

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Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Surabaya, Indonesia during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SURABAYA

The port of Tanjung Perak Surabaya (TPS) in the Java province is the second largest port in Indonesia and the centre of cargo distribution for East Java and a gateway to Eastern Indonesia. The port is accessed from the North through the Madura strait, a 25 mile long, 100 m wide and 9.5 m deep channel between East Java and Madura Island (Logcluster 2021, internet site).

The location of TPS is very strategic as it connects directly to the Surabaya toll way and the railway network into East Java and Eastern Indonesia.

The port has 6 main terminals, consisting of multi-purpose terminals for conventional cargo handling, a passenger terminal, RoRo and an international container terminal. Tugging, pilotage, bunker, storage and shipyard services are also provided.

The port of TPS is managed by the PT Pelabuhan Indonesia (Pelindo) III. Whilst the TPS container terminal is managed by DP World Surabaya. Other terminal services are provided by PT. Berlian Jasa Terminal Indonesia and PT Pelindo Marine Service provides pilotage, tug, towage and maintenance and logistics services (Logcluster 2021, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The location of TPS is very strategic as it connects directly to the Surabaya toll way and the railway network into East Java and Eastern Indonesia.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Indonesia is an IMO Member State (1961) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1981) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

An electronic Terminal Operating System (TOPS) has been in use since 1999. Sourced from Sydney Australia, this software is used for operational activity tracking and documentation control. Using TOPS container movement can be monitored in real time by a TPS Officer and the respective container owner.

Since 2018 import and export clearance has been handled via a customs Electronic Data Interchange (EDI) system. Inward and outward manifests are submitted online to the Customs agency and or port authority.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

TPS port security has been ISPS compliant since June 2004. Seaside security is managed by KPLP/Gamat boat patrols and land side security is handled by approximately 188 port security staff employed by PT Pelabuhan Indonesia (Pelindo) III.

The port has a CCTV surveillance system of 32 cameras and also utilises 3 patrol cars, 2 metal detectors and 2 X-ray units.

There is a secure and dedicated dangerous goods storage warehouse, 6,500 m^2 in size.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The Indonesian Government has national standards in place for the transportation, handling and storage of hazardous substances.

Indonesia’s National Oil Spill Contingency Plan (NOSCP) (2018), extends to hazardous and noxious substances (HNS). In the event of an emergency situation, the National Team for Oil Spill Response would provide the technical expertise, with input from other institutions, government departments, the private sector and other non-government organisations. The National Team through its Command and Control Centre would carry out the response, using personnel, equipment and materials belonging to its member organisations in the vicinity of the emergency incident.

The DGST is the competent authority and administers the Plan for dealing with pollution by oil and other noxious substances in marine and freshwater environments. The DGST has equipment which could be utilised for HNS spills and is supported by further equipment from the oil industry.

CONCLUSION

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

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33.0 PORT OF TAKORADI, GHANA

28 January 2021

20360521-port- 033. RevA

Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Takoradi, Ghana during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF TAKORADI

The port of Takoradi is located 230 kilometres east of Accra. Takoradi is strategically positioned to service the northern hinterland of Ghana and serve as an alternative port for economic operators in the landlocked countries of Burkina Faso, Niger and Mali (Logcluster 2021, internet site). In 2015, the port handled 27% of Ghana's seaborne traffic, 68% of Ghana's seaborne exports and 15% of Ghana's seaborne imports. Major commodities handled through the port are manganese, bauxite, wheat, bulk and bagged cocoa, quicklime, containerised cargoes, equipment for the mining and oil/gas industry. Traffic through the port is facilitated by leading shipping lines and the port's wide range of equipment along with stevedoring services provided by the private sector enable it to offer a wide range of services.

Cyanide manufacturers and suppliers have the ability to ship product to the port from different parts of the world. The port allows for the unloading of shipments for final road transportation to the mining operations in Ghana as well as Burkina Faso and Eastern Mali.

The Ghana Ports and Harbour Authority (GPHA) oversees port operations. This includes (Ghana Ports and Harbours Authority 2021, internet site):

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.
- Stevedoring services are provided by the GPHA and five private stevedoring companies. GPHA controls 25% of all stevedoring. The remaining 75% is performed by private companies.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.
- Ghana is a member of the International Maritime Organization (IMO) Council and is party to the Abuja Memorandum of Understanding, and as such performs its Port State Obligations, supervises foreign ships that berth at Ghana ports, and promotes compliance with international conventions among Flag States through Port State Control.
- GPHA operates an integrated management system in line with requirements of ISO 9001: 2015, ISO 14001: 2015 and OHSAS 18001:2007.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Takoradi is strategically positioned to service the northern hinterland of Ghana and serve as an alternative port for economic operators in the landlocked countries of Burkina Faso, Niger and Mali. The port allows for the unloading of shipments for final road transportation to the mining operations in Ghana as well as Burkina Faso and Eastern Mali.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Ghana is an IMO Member State (1959) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port requires advance notice of 72 hours prior to the estimated arrival of vessels. The harbour master has oversight of nautical operations within the port, including pilotage, towage, mooring and unmooring, and vessel traffic services. Software programs control container movement through the ports.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

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 assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and contents. MPS utilises a terminal operating system to manage container movement, vessel discharges and yard allocations to minimise delays. Containers are tracked using differential global positioning systems.

The clearance process at Takoradi port comprises:

- Declaration of cargo data
- Customs Document Verification, System Validation, cargo Classification and Valuation, Risk Assessment and quality assurance, payment of duty, cargo verification
- Release by the Shipping Agent
- Delivery by the port and other receipt delivery service providers
- Customs physical examination or scanning of cargo before cargo is allowed to exit the port.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Takoradi is accredited under the ISPS Code (since 2004). This is maintained by the GPHA which reports to the appropriate central Ghana government minister. The port has an on-site security presence which is present at all times and includes a mobile security team. Port security personnel stationed at the access to the port check the authority of drivers accessing the port area.

The *Ghana Maritime Security Act (2004), Section 48 Port Security* states that a port facility operator shall develop, implement, and maintain a port facility security plan based on a port facility security assessment of that facility. The design of a port facility security plan must suit the purposes of ship-port interface and protect that facility from unauthorised access or disclosure.

All sodium cyanide transited through the port of Takoradi remains sealed inside its container at all times preventing contact with water and other incompatible materials. Seals are individually numbered and tamper evident.

Admission of solid sodium cyanide through the port of Takoradi is limited to a specific customer. Solid sodium cyanide is only held at the port of Takoradi for a short period to enable completion of specific Ghanaian governmental customs and quarantine clearances.

Importers are penalised substantial charges should any delay in remove of the product occurs.

The port provides a dedicated area for workers to eat and drink which is well away from the area in which the product is located.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The GPHA is responsible for the protection of property and emergency preparedness and response.

The port of Takoradi is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The lead agency for dealing with major spills is the Environment Protection Agency of the Ministry of Environment, Science and Technology, which works in conjunction with the Ministry of Transport and Communications. Limited emergency response equipment is available through both Government and private sector sources.

CONCLUSION

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

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34.0 PORT OF TAURANGA, NEW ZEALAND

28 January 2021

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Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Tauranga, New Zealand during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW THE PORT OF TAURANGA

The port of Tauranga (Tauranga) is located in the Bay of Plenty region, on New Zealand's North Island. It is operated by the company, Port of Tauranga Ltd and is New Zealand's largest freight gateway port. The world's largest shipping lines regularly call at the port of Tauranga, exporting a wide range of New Zealand products and importing products from all over the world (Port of Tauranga 2021a, internet site).

The Tauranga Container Terminal has dedicated road and rail access, streamlining cargo movement into and out of the port, and is a key link in the MetroPort (land port) Auckland onward freight service. The Terminal operates a fleet of 36 straddle carriers linked by leading-edge information technology, ensuring the efficient movement of containers and allowing customers to track their cargo through every step in the process (Port of Tauranga 2021b, internet site).

From 1 July 2020 to 30 September 2020, the port of Tauranga handled nearly 6.4 million tonnes of cargo, a 5% decrease on the same period last year, whilst containerised cargo decreased by 8% to 287,670 TEUs (Port of Tauranga 2021c, internet site).

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.
- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Stevedoring is the process of loading vessels and stowing cargo. At Tauranga this service is provided by privately-owned companies under contract to exporters, importers or shipping companies. Stevedoring companies employ their own workforce and directly service their own customers.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

At Tauranga, all cargo, which is, or contains Dangerous Goods, is to be received, stored and despatched using appropriate hazard control procedures based on the IMDG classification. The port area is regarded as a large ship and all cargo is to be planned and stowed in terms of the Code. Planners preparing cargo for loading into ships use the IMDG Code to ensure safe and compliant stowage of the vessel (Port of Tauranga 2021d, internet site).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Tauranga's location is central to key export commodity sources. There is direct and dedicated access to New Zealand's largest import market, the capacity to expand infrastructure as demand increases, and unrivalled sea, road and rail connections (Port of Tauranga 2021e, internet site).

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

New Zealand is an IMO Member State (1960) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1990) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

The SPARCS terminal computer-based cargo allocation system has the capacity to track containers of dangerous goods via the inputs from shipping manifests and other delivery documentation. Programming will allocate a yard storage position for dangerous goods consignments based on the nature of the goods. A Dangerous Goods in Yard list can be produced at any given time using SPARCS. This will give container numbers, positions, class, UN numbers, and container weight for all dangerous goods containers currently in the yard.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Tauranga has a statutory obligation to comply with the Port's New Zealand Customs (NZC) Procedure Statement, the Customs & Excise Act 1996, the Maritime Security Act 2004 and the Health & Safety at Work Act 2015. The entire area within the port of Tauranga security fence line is a designated Customs Controlled Area (CCA) and the port is required to monitor and control all persons entering the CCA.

Access to the wharf area is restricted to authorised persons only. Entry on to the port area is controlled by barrier arms at all road gates. Surrounding roads, Rata Street and Tasman Quay gates are only open to heavy vehicles and light vehicles carrying security access cards. The Hull Road gate is manned 24 hours a day, seven days per week, and is monitored by a Customer Service Centre. Only heavy vehicles, authorised persons and visitors with legitimate business reason are permitted on to the port. The gate at Sulphur Point on the Tauranga side of the harbour is manned 24 hours per day.

Dangerous goods are stored in accordance with the detailed management procedures as specified in the Dangerous Goods and Hazardous Substances Code of Practice Section 5. At least two (2) days before the arrival of a vessel, the Agent or Stevedore is to supply a copy of the dangerous goods declaration for every consignment which carries an IMDG classification. Cargo containing dangerous goods is stored in pre-planned positions. There are a series of maps which indicate which classes of dangerous goods can be stored where Port of Tauranga 2021f, internet site).

The *HSNO Act 1996* and its associated Codes of Practice- *HSNOCOP-16, HSNOCOP-28* and *HSNOCOP-2* ensure that cyanide is stored securely and with adequate ventilation.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Tauranga has an Emergency Procedures Manual (EPM) which covers the port storage areas, the commercial wharves and vessels berthed alongside them. The purpose of the manual is to provide a guide for the initial response to an emergency situation and to facilitate the early calling of the emergency services when required; to ensure the provision of first aid for injured persons in an effort to preserve human life; to ensure the efficient communication between emergency services and port personnel and to control or limit the effect an emergency might have on the port facilities and employees.

The EPM contains procedural and scenario based information for emergency situations involving hazardous substances including the necessary contacts and steps to follow in order to raise an alarm or safely evacuate from an area. *Section 7.5.3 Hazardous Substances Spills* describes the process for dealing with spills on berthed ships and on the wharf area. The emergency procedure information contained in the EPM is reinforced in the *Dangerous Goods and Hazardous Substances Code of Practice Section 12- Emergency Procedures for Hazardous Substances Spills.*

Code of Practice *HSNOCOP-36 Preparing for a Chemical Emergency* also provides a comprehensive guide to emergency management suitable for use by businesses and facilities engaged in the storage, transport, use and handling of chemicals and hazardous substances.

CONCLUSION

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

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35.0 PORT OF TEMA, GHANA

28 January 2021

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Author: Craig Currie Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Tema, Ghana during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF TEMA

The port of Tema is the largest port in Ghana and located 30 km from Accra. The port handles about 12 million tonnes of cargo annually and receives over 1,650 vessel calls per year, including container vessels, general cargo vessels, tankers, Roll-on/Roll-off (Ro-Ro) and cruise vessels (Logcluster 2021, internet site).

Tema port is the main container port servicing Ghana and its neighbouring landlocked countries. The port area includes a 1 million twenty-foot equivalent units (TEUs) container terminal, a fishing harbour, a shipyard with the largest dry dock in West Africa and a range of deep-water berths. Recent expansion projects, including a new dedicated 840 point reefer terminal and a 450 m long by 50 m wide bulk jetty, increased the port's berthing capacity from 14 to 16 berths.

Cyanide manufacturers and suppliers have the ability to ship product to the port from different parts of the world. The port allows for the unloading of shipments for final road transportation to the mining operations in Ghana as well as Burkina Faso and Eastern Mali.

The Ghana Ports and Harbour Authority (GPHA) oversees Port operations. This includes:

- Port protocols exist for docking of vessels, e.g., use of Pilots; use of tug boats; different weather conditions, tides, currents; safety; and general Port operations. This sees to the safe docking and turnaround of the vessels in and out of the Port.

- Entry into port is controlled by the port's harbour master who understands the port protocols and unique issues regarding the approach and docking of a vessel at the port. The harbour master has oversight of nautical operations within the port. This comprises operational tasks related to the safety and efficiency of vessel management within the boundaries of the port. The harbour master's office allocates berths and coordinates all services necessary to berth and un-berth a vessel. These services include pilotage, towage, mooring and unmooring, and vessel traffic service.
- The Ship's Captain works in conjunction with the harbour master as he understands his vessel and can implement and assist with the harbour master's instructions.
- The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- The GPHA manages the handling of dangerous goods through the Tema port.

Stevedoring services are provided by the GPHA and ten private stevedoring companies. GPHA controls 25% of all stevedoring. The remaining 75% is performed by private companies.

The dedicated 1 million TEU container terminal is operated by Meridian Port Services (MPS). MPS operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas; port security, emergency response, control systems for companies and their vehicles collecting and or delivering containers
- Software programs control container movement through the ports. In the case of the sodium cyanide containers on arrival the ports the containers are stacked separately and segregated from other containers. The software also monitors the restricted time allowed for dangerous goods to be handled through the port and allows the port to charge penalty rates for goods not cleared and taken from the port within a defined time.

Ghana is a member of the International Maritime Organization (IMO) Council and is party to the Abuja Memorandum of Understanding, and as such performs its Port State Obligations, supervises foreign ships that berth at Ghana ports, and promotes compliance with international conventions among Flag States through Port State Control.

GPHA operates an integrated management system in line with requirements of ISO 9001: 2015, ISO 14001: 2015 and OHSAS 18001:2007.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally.

This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Tema is located in relatively close proximity to mining operations in Ghana and landlocked countries within the West Africa region.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Ghana is an IMO Member State (1959) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1983) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port requires advance notice of 72 hours prior to the estimated arrival of vessels. The harbour master has oversight of nautical operations within the port, including pilotage, towage, mooring and unmooring, and vessel traffic services. Software programs control container movement through the ports.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Material Safety Data Sheets (MSDS).

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 assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and contents.

MPS utilises a terminal operating system to manage container movement, vessel discharges and yard allocations to minimise delays. Containers are tracked using differential global positioning systems.

The clearance process at Tema port comprises:

- Declaration of cargo data
- Customs Document Verification, System Validation, cargo Classification and Valuation, Risk Assessment and quality assurance, payment of duty, cargo verification
- Release by the Shipping Agent
- Delivery by the port and other receipt delivery service providers
- Customs physical examination or scanning of cargo before cargo is allowed to exit the port.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Tema has restricted access and security processes, including optimal character recognition, biometric identify cards and CCTV. The port has perimeter fencing and terminal entry and exit gates are monitored on 24-hour basis. Software programs control container movement through the ports.

The port of Tema has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. The area into which cyanide containers are placed whilst awaiting clearance is well ventilated to prevent the build-up of hydrogen cyanide gas and is suitable to contain any spillage that may occur.

Whilst cyanide is present at the port, temporary signage is provided to warn of its presence and the safety and personal protective equipment requirements. Whilst the product is being stored or handled, signage prohibiting the consumption of food and beverages and open sources of ignition, including smoking, is displayed.

All sodium cyanide transited through the port of Tema remains sealed inside its container at all times. Seals are individually numbered and tamper evident. Admission of solid sodium cyanide through the port of Tema is limited to a specific customer. Solid sodium cyanide is only held at the port of Tema for a short period to enable completion of specific Ghanaian governmental customs and quarantine clearances.

The port of Tema is accredited under the ISPS Code. This is maintained by the GPHA which reports to the appropriate central Ghana government minister. The port has on-site security personnel who are present at all times, this includes a mobile security team and port security personnel stationed at entry points.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The GPHA is responsible for the protection of property and emergency preparedness and response.

The port of Tema has emergency response procedures by following the IMDG Code requirements. The port has an internal emergency response and first aid capabilities that is supported by external sources. Training is provided to personnel in dangerous goods awareness and procedures.

The port of Tema is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan.

This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (ITOPF 2020, internet site).

The lead agency for dealing with major spills is the Environment Protection Agency of the Ministry of Environment, Science and Technology, which works in conjunction with the Ministry of Transport and Communications. Limited emergency response equipment is available through both Government and private sector sources.

CONCLUSION

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

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36.0 PORT OF VERACRUZ, MEXICO		28 January 2021	
		20360521-port- 036. RevA	
Author:	Craig Currie	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Veracruz, Mexico during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF VERACRUZ

The port of Veracruz is located on the shores of the Gulf of Mexico in south-central Mexico, a little over 300 km east-southeast of Mexico City. The port of Veracruz is the main seaport on Mexico's east coast and also serves as a communications hub for the State of Veracruz. Located about 240 km southeast of the port of Tuxpan and almost 400 km southeast of the port of Tampico, the port is the backbone of the city's economy (World Port Source 2021, internet site).

The Port of Veracruz is Mexico's largest, and considered most vital port, it serves all of central and southern Mexico a through a network of railways and roads. It also serves North, Central, and South America and Europe and Africa via its strategic geographic location.

Port operations include:

- Port protocols exist for docking of vessels (e.g., use of Pilots, use of tug boats, management of different weather conditions, tides, currents and safety and general port operations). This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port's Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship's Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot's instructions.

- The approach of the vessel to the ports will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.
- Once a vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Third party stevedores manage the onshore (wharf) operations at the dedicated container terminal.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel's manifest.

Containers of dangerous goods discharged by vessels at the container terminal are moved to various areas within the port for storage until customs clearance has been completed and transport is arranged. Containers of cyanide are segregated from other classes of dangerous goods.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Veracruz is Mexico's largest, and considered most vital port, it serves all of central and southern Mexico a through a network of railways and roads. It also serves North, Central, and South America and Europe and Africa via its strategic geographic location.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Mexico is an IMO Member State (1954) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Port Operators are aware (as per *NOM-033-SCT4-1996*) when sodium cyanide containers are to arrive at the port. The stevedores receive the vessel's manifest, which includes unloading and handling information for the port and this information is then captured in the company's container terminal software program.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Veracruz must adhere to the requirements of *Official Mexican Standard NOM-010-SCT2/2009*, *Compatibility and segregation provisions for the Storage and transportation of hazardous substances, materials and waste* and *NOM-023-SCT4-1995 Conditions for the management and Storage of dangerous goods in ports, terminals and sea units.*

These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form, from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products.

The port or terminal operator must ensure that the areas where goods are handled and stored be monitored at all times and that personnel involved in such operations have received adequate training. The operator shall keep a permanent record of any dangerous goods encountered in the port area and will ensure that in the areas where the products are handled and stored, personnel have accessible information on emergency procedures.

All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

It will also ensure that in such areas signage is displayed to show smoking is prohibited, sources of ignition are avoided and proper precautions are taken with regards to personal protective equipment for the handling of dangerous goods.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The Mexican Government has national standards in place for the transportation, handling and storage of hazardous substances which applies to all ports, terminals and offshore facilities where dangerous goods may be stored.

Mexican Standard *NOM-005-SCT2/1994*, *Emergency Information for the Transportation of hazardous substances, materials and waste* and *NOM-023-SCT4-1995*, *Conditions for the management and Storage of dangerous goods in ports, terminals and sea units* both contain provisions for ensuring preparedness in the event of an emergency situation. Essentially these standards require that the port administration form and maintain (via training) an emergency response team, ensure emergency response equipment is available and well maintained and have in place appropriate emergency incident notification and reporting mechanisms.

The port of Veracruz is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances (HNS) pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The Navy's Marine Environment Protection Division is the competent authority and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

The Navy, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment).

CONCLUSION

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

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37.0 PORT OF WALVIS BAY, NAMIBIA

28 January 2021

20360521-port- 037. RevA

Author: Craig Currie   Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Walvis Bay, Namibia during January 2021 on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF WALVIS BAY

The Namibian Ports Authority (NAMPORT) was formed on 28 February 1994, when Walvis Bay was reintegrated into Namibia and the Namibian Ports Authority Act was passed. The Act placed the Port of Walvis Bay's assets, management and staff back under Namibia's jurisdiction. Since then, NAMPORT, under the auspices of the Ministry of Works and Transport, has been tasked with managing, operating and developing Namibia's ports (Namibian Ports Authority 2021, internet site).

The port of Walvis Bay is situated on the west coast of Africa and strategically placed to provide a transit route between southern Africa, Europe, Asia and the Americas. Namibia continues to attract foreign direct investment, and its ports form a natural gateway for international trade. Walvis Bay offers direct access to principal shipping routes, and Namibia's connecting transport corridors enable the country to compete as a transport hub for regional and international trade between the Southern African Development Community (SADC) countries, Europe, Asia, the Americas, and the rest of the world.

Entrance to the port consists of a 5.2 Nautical Mile (NM) long channel that is 134 m wide and 14 m deep. On average, between 2,000 and 2,250 vessels visit the port of Walvis Bay every year, of which container vessels account for the largest number of visits. The existing container terminal has 350,000 Twenty-foot Equivalent Unit (TEU) throughput capacity per annum. A new container terminal will soon increase that to 750,000 TEUs per annum.

Considered a congestion-free port with minimum delays, the port of Walvis Bay currently handles 7 million tonnes of cargo per annum and is suitably equipped to increase that total to 8-10 million tonnes. The New Container Terminal project will provide increased container handling capacity as well as increase the port's bulk and break-bulk handling capacity by freeing up the existing container terminal to become a multi-purpose terminal.

The port of Walvis Bay handles container imports, exports and transhipments, as well as bulk and break-bulk of various commodities. NAMPORT serves a wide range of industries such as the petroleum, salt, mining, and fishing industries. Both bulk and bagged salt are also exported from the port of Walvis Bay.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it appears to meet reasonable industry standards for safety, security, and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2020) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2020) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code (International Maritime Organization [IMO] 2018), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

NAMPORT Regulations state that *"…the handling of dangerous cargoes shall be in accordance with the rules laid down in the IMDG Code..."* and there are entry requirements for all vessels carrying dangerous goods.

Namibia is an IMO Member State (1994) (IMO 2020, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (2000) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2018) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Port Authority organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates and multimodal dangerous goods forms.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port area has a closed perimeter with restricted access that is controlled by security personnel. There is a dedicated storage area for specialised products including dangerous goods; the container storage area has CCTV installed and remains fully lit at night.

The Control Centre for the port is equipped with computer management systems for alarms, dangerous goods tracking, emergency communications, records of access/egress and video surveillance.

NAMPORT has an Emergency Response Procedure for the hazardous cargos that pass through the port.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Namibia has been a member State of the IMO Council since 1994, it complies with the requirements of the IMDG Code.

A Government Action Control Group, led by Namibian Search & Rescue (NAMSAR) has developed an Emergency Plan covering 17 scenarios, including oil spills. The Directorate of Maritime Affairs of the Ministry of Works, Transport and Communication has also produced a National Oil Spill Contingency Plan (NOSCP) with the aid of the IMO. The Port of Walvis Bay has developed a local spill contingency plan.

The Port of Walvis Bay is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States that are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point, and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training, and exercises (ITOPF 2020, internet site).

CONCLUSION

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

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38.0 PORT OF MERSIN, TURKEY

28 October 2022

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Author: Joshua Foote | Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Mersin during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF MERSIN

The Port of Mersin is one of the main container ports servicing Turkey. The General Directorate of Turkish State Railways (TCDD) is the port authority for the port of Mersin. Mersin port is Turkey's largest container port and the port facility is connected to Turkey's rail and highway networks providing a key node for import and export for the country.

Access to the harbour from the Aegean Sea is through Izmir Inlet where depths range from 25 to 40 fathoms. Depths vary by 6 to 8 ft at Pelikan Bank; 6 to 12 ft in the vicinity of Yenikale; and 12 to 18 ft inside the middle harbour anchorage area.

The port area covers 124 hectares with total berth length of 3,370 metres. The following points highlight some of the key features of the port of Mersin (Mersin International Port, 2021):

- The port has 21 total berths with depth of 15.8 m,
- 2,600,000 TEU per year of container handling capacity,
- 1,000,000t per year of general cargo handling capacity,
- 12 gantry cranes and 5 mobile cranes to support operations

- The port provides 24/7 pilotage, towage, and mooring services.

The Port of Mersin has a continuous security and operational monitoring system, the overall running of which is controlled via a centralised Terminal Operating System (TOS). There are CCTV cameras at numerous points within the port, and entry/exiting is controlled through biometric identification cards. Entry and exit are limited to authorised personnel only (Mersin International Port, 2021).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port of Mersin was chosen as it is one of the country's main container ports, with access to international standard equipment and operational standards.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC], 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Turkey is an IMO Member State since 1958 (IMO, 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation (2000) (SOLAS 2022, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code, 2021 (Parts 4, 5 and 7) (IMO, 2019) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

To ensure safe carriage of dangerous goods and prevent pollution to the environment, the IMDG code, which is mandatory international code, details requirements applicable to individual substances, including sodium cyanide, and being a signatory member of the IMO, the port of Mersin is required to adhere to these international operating requirements. Vessels are required to declare dangerous cargo before arriving/leaving the port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

The port utilise their own tracking system to monitor the progress of all containers from the loading port through the various transhipment ports until the final destination. The vessel's Captain carries a Dangerous Goods manifest (including stowage plan) and Packing Certificates for each of the hazardous cargo transport units which is updated at each port visited.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The Port of Mersin has a continuous security and operational monitoring system, the overall running of which is controlled via the centralised TOS. There are CCTV cameras at numerous points within the port, and entry/exiting is controlled through biometric identification cards. The port has introduced container seal control application system which ensure full container seal control is made, and is ISPS certified (Mersin International Port, 2021).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Turkey is a Member State of the IMO Council (IMO, 2019) and complies with the requirements of the IMDG Code (IMO, 2019). As per the 2021 Sustainability Report (Mersin International Port, 2021), an Emergency Intervention to Sea Pollution Plan has been endorsed by Ministry of Environment and Urbanisation.

CONCLUSION

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

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39.0 PORT OF LAZARO CARDENAS, MEXICO

28 October 2022

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Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Lazaro Cardenas during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF LAZARO CARDENAS

The Port of Lazaro Cardenas is located within the Mexican State of Michoacán. The port is owned and operated by the Mexican government and is one of its largest seaports. It is the deepest port in Mexico with a navigation area up to 19 metres (62ft) deep, and 38 shipping lines to accommodate varied cargo at a capacity of 2.2 million TEU per annum.

The port is strategically located having direct access to a highway, rail connection and fifteen intermodal terminals. There is daily departure of two railways within Mexico and the United States with a capacity of up to 240 containers.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be affected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The Port of Lazaro Cardenas was selected based on it being the largest seaport in the region, with modern and capable infrastructure that is located a key strategic location.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Mexico is an IMO Member State (1954) (IMO, 2019)) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2022, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code, 2021 (Parts 4, 5 and 7) (IMO 2019) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

To ensure safe carriage of dangerous goods and prevent pollution to the environment, the International Maritime Dangerous Goods, 2021 (IMDG) which is mandatory international code, sets out the detail requirements appliable to each individual substance and being member of the IMO, the port is expected to fulfill the set requirements. As a member of the IMO, vessels are required to declare dangerous cargo before arriving/leaving the Port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest, which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Lazaro Cardenas must adhere to the requirements of Official Mexican Standard NOM-010-SCT2/2009, Compatibility and segregation provisions for the Storage and transportation of hazardous substances, materials and waste and NOM-023-SCT4-1995 Conditions for the management and Storage of dangerous goods in ports, terminals and sea units. These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products. Available services applied to the port of Lazaro Cardenas are:

- Controlled points of access/egress, perimeter fences, anchorages, maneuver areas and berthing.
- Facilities for cargo, storage areas and load handling equipment.
- System of electrical distribution networks, telecommunications, and computer networks.
- Vessels serving the port (tugs)
- Surveillance equipment and protection system (automated CCTV systems).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The Mexican Government has national standards in place for the transportation, handling and storage of hazardous substances which applies to all ports, terminals, and offshore facilities where dangerous goods may be stored.

Mexican Standard *NOM-005-SCT2/1994*, *Emergency Information for the Transportation of hazardous substances, materials and waste* and *NOM-023-SCT4-1995*, *Conditions for the management and Storage of dangerous goods in ports, terminals and sea units* both contain provisions for ensuring preparedness in the event of an emergency situation. Essentially these standards require that the port administration form and maintain (via training) an emergency response team, ensure emergency response equipment is available and well maintained and have in place appropriate emergency incident notification and reporting mechanisms.

The port of Lazaro Cardenas is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances (HNS) pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The Navy's Marine Environment Protection Division is the competent authority and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

The Navy, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment).

CONCLUSION

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

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40.0 PORT OF GUAYMAS, MEXICO

28 October 2022

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Author: Joshua Foote

Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Guaymas during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI, 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF GUAYMAS

The Port of Guaymas, is located on the Gulf of California in the southwestern area of the State of Sonora, Mexico. The Administración Portuaria Integral (API) de Guaymas, S.A. de C. V. is the port authority for the Port of Guaymas. The Port of Guaymas has a diverse infrastructure that allows the safe navigation of large vessels with an access channel, docking and 6 berthing positions. The berths are separated into two bands: the south band with 360 m and the east band with 900 m. The berthing positions are frequently maintained and dredged to keep them in optimal conditions.

The port of Guaymas handled 7.3 million metric tons of cargo in 2019. Cargo predominantly included containers, mineral bulk, agricultural bulk, general cargo, and fluids. Containerized cargoes included general cargo, specialized machinery, furniture, computer and electrical parts, audio and medical equipment, and refrigerated cargoes and perishables like fish and wheat. Mineral bulk cargoes include copper concentrate, cement, magnetite, gypsum, barite, fertilizer, and molybdenum. Major agricultural bulk cargoes include wheat, soy, corn, safflower, sugar, vegetables, and livestock. General cargoes include wood and steel products, rods, pipes, and roll-on/roll-off cargoes. Fluid cargoes are petroleum, diesel, sulfuric acid, ammonia, and fish oil.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The Port of Lazaro Guaymas was selected based on its compliance with industry safety, emergency and security standards and its capable infrastructure.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021 (International Maritime Organization [IMO] 2019), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Mexico is an IMO Member State (1954) (IMO, 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2022, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code, 2021 (Parts 4, 5 and 7) (IMO 2019) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

As a member of the IMO, vessels are required to declare dangerous cargo before arriving/leaving the Port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest, which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port of Guaymas must adhere to the requirements of Official Mexican Standard NOM-010-SCT2/2009, Compatibility and segregation provisions for the Storage and transportation of hazardous substances, materials and waste and NOM-023-SCT4-1995 Conditions for the management and Storage of dangerous goods in ports, terminals and sea units.

These standards state that ports, terminals and offshore units must establish areas for management, storage and adequate segregation of dangerous goods in bulk or packed form, from other cargo. There is a compatibility and segregation table for dangerous substances, materials and waste. These storage areas must have the appropriate infrastructure, facilities and signage on display in accordance with the inherent risks of the products.

The port or terminal operator must ensure that the areas where goods are handled and stored be monitored at all times and that personnel involved in such operations have received adequate training. The operator shall keep a permanent record of any dangerous goods encountered in the port area and will ensure that in the areas where the products are handled and stored, personnel have accessible information on emergency procedures.

All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

It will also ensure that in such areas signage is displayed to show smoking is prohibited, sources of ignition are avoided and proper precautions are taken with regards to personal protective equipment for the handling of dangerous goods.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The Mexican Government has national standards in place for the transportation, handling and storage of hazardous substances which applies to all ports, terminals and offshore facilities where dangerous goods may be stored.

Mexican Standard *NOM-005-SCT2/1994*, *Emergency Information for the Transportation of hazardous substances, materials and waste* and *NOM-023-SCT4-1995*, *Conditions for the management and Storage of dangerous goods in ports, terminals and sea units* both contain provisions for ensuring preparedness in the event of an emergency situation. Essentially these standards require that the port administration form and maintain (via training) an emergency response team, ensure emergency response equipment is available and well maintained and have in place appropriate emergency incident notification and reporting mechanisms.

The port of Guaymas is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances (HNS) pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The Navy's Marine Environment Protection Division is the competent authority and administers the National Contingency Plan (NCP) for dealing with pollution by oil and other noxious substances in marine and freshwater environments.

The Navy, with the support of private contractors, manages the response to and monitoring of a Hazardous and Noxious Substances (HNS) incident and some equipment is readily available (such as PPE, respirators, pumps, power packs and air monitoring equipment).

CONCLUSION

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

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41.0 PORT OF LYTTELTON, NEW ZEALAND		28 October 2022	
		20360521-port- 041. RevA	
Author:	Joshua Foote	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Lyttleton during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF LYTTELTON

The Port of Lyttelton is located on the southern island of New Zealand, outside the township of Lyttelton and approximately five nautical miles from open sea. The entrance to the inner harbour is approximately 150m wide and provides a sheltered, deep-water port for container, bulk, and conventional vessels.

Cargo includes fertiliser, gypsum, cement, imported vehicles, aviation fuel, diesel, and other petroleum products. The port is also New Zealand largest coal facility. In total, over 500,000 TEUs of container cargo were loaded and unloaded in FY22.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The Port of Lyttelton was selected based on its it being the largest port in the South Island of New Zealand, with modern infrastructure close to end users.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

New Zealand is an IMO Member State since 1960 (IMO 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2020, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2019) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

As a member of the IMO, vessels are required to declare dangerous cargo before arriving/leaving the Port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest, which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Under Part 24A of the New Zealand maritime rules, the master of a ship carrying dangerous goods must give advance notice to the Harbourmaster of the ship's arrival at a port at least 48 hours beforehand if on an international voyage and as soon as practicable for a ship on a coastal voyage, but it must be before entering the harbour.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

Hazardous substances are managed in accordance with local regulations, including the Maritime Transport Act 1994, The Hazardous Substances and New Organisms Act 1996 (HSNO) and the Health and Safety at Work (Hazardous Substances) Regulations 2017.

All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

The port of Lyttelton is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances (HNS) pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

As well as the port of Lyttelton having internal capabilities for spill response, Maritime New Zealand administers the Maritime Transport Act 1994 and provides support for major incidents and emergencies, including spills.

CONCLUSION

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

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42.0 PORT OF CORINTO, NICARAGUA

28 October 2022

20360521-port- 042. RevA

Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Nicaragua during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CORINTO

The Port of Corinto is located in the province of Chinandega, on the western coast of Nicaragua, in the department of Chinandega, and is largest pot in Nicaragua. The port is governed by the Empresa Portuaria Nacional (EPN). EPN has responsibility for six Nicaraguan ocean port and seven lake ports. It is the country's main commercial port and is connected by highway to mainland Nicaragua year-round. The port has three terminals: Terminal de Carga General, Terminal de Contenedores and Terminal Carga Liquida, with a combined outdoor storage area of 50,700 m^2. The exterior channel is 14.6 m deep, 150 m wide, and 3.4 km long while the inner channel is 13.35 m deep, 115 m wide, and 3.14 km long.

The Port has a marginal concrete pier of 610 m long with terminal and liquid outer harbor and warehouse for storage of goods. The port is also known as Puerto Corinto and is the biggest and most important port in the country with an excellent natural protected harbour.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The Port of Corinto was selected based on its strategic location with year-round access to mainland Nicaragua.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021 to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Nicaragua is an IMO Member State (since 1982) (IMO, 2019), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

To ensure safe carriage of dangerous goods and prevent pollution to the environment, the International Maritime Dangerous Goods (IMDG) which is mandatory international code, sets out the detail requirements appliable to each individual substance and being member of the IMO, the port is expected to fulfill the set requirements. As a member of the IMO**,** vessels are required to declare dangerous cargo before arriving/leaving the Port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port is required to meet international standards for security measures as per the IMO, and is monitored by the Directorate General of Water Transport, EPN. The Corinto Port security and protection is regulated by national security and defence policies as highlighted under chapter VI, security and maritime port protection, Law No. 838 General Law of Ports of Nicaragua (Republica De Nicaragua, 2013). All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials.

Recent ICMI supply chain Re-Certification Audit reports (MSS Code Certification Service, 2021), as conducted for Draslovka Global Ocean Supply Chain, have found that the Corinto Port is considered a well-operated and secure facility when it comes to minimising the potential for accidental releases of sodium cyanide, and the port is equipped with appropriate facilities and infrastructure.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Nicaragua has been a Member State of the IMO since 1982 (IMO 2020) and complies with the requirements of the IMDG code (IMO 2018). The International Safety Management (ISM) Code under, administered under the requirements of the IMO, requires all ships, and the companies responsible for their operation to maintain a Safety Management System which includes procedures for emergency planning and response (IMO, 2019).

CONCLUSION

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

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43.0 PORT OF SIHANOUKVILLE, CAMBODIA

28 October 2022

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Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Sihanoukville during October 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SIHANOUKVILLE

The Port of Sihanoukville is located in the Preah Sihanouk province in the southwest of Cambodia and is the countries only deep-sea international port. The port has 8 Berths and a tanker terminal naturally protected from winds through islands and a constructed breakwater. There is a container terminal with a combined 155,000 m^2 capacity and general cargo terminal with a combined 81,000 m^2 capacity. The ports container throughput is approximately above 540,000 TEUs, with access to end users through major roads and the Southern Railway Line.

To safeguard and improve vessel management, the installation of Vessel Traffic Management System (VTMS), navigational buoys and maintenance of vessel channels has been carried out. A Container Terminal Management System for container management, yard and vessel planning, and container offloading has been installed (PAS, 2019). Available safety and security features include equipment such as X-ray and Gamma-ray container scans, CCTV cameras, emergency response personnel (fire), security boat patrols, and medical and ambulance capabilities are available.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's *Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points* procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations* (United Nations 2019) and National Codes of Practice such as the *Australian Code for the Transport of Dangerous Goods by Road or Rail* (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's *Carrier Assessment-Procedure and Questionnaire* (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code,2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Cambodia is an IMO Member State (since 1961) (IMO 2019, internet site) and a Safety of Life at Sea (SOLAS) Signatory Nation (1977) (SOLAS 2022, internet site), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) (IMO 2019) and the SOLAS Convention 1974 (Chapter 7) (United Nations 1981).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The port has implemented a Container Terminal Management System (CTMS) for container management, offloading, yard and vessel planning. As a member of the IMO**,** vessels are also required to declare dangerous cargo before arriving/leaving the Port. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All sodium cyanide remains sealed within containers preventing contact with water and other incompatible materials. In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case (IMO, 2019).To safeguard vessel management the installation of Vessel Traffic Management System, navigational buoys and maintenance of vessel channels were installed(PAS, 2019) .

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Cambodia has been a member state of IMO since 1961 (IMO 2019) and it complies with the requirements of the IMDG code. The product transferred through the port remain sealed within the containers which significantly reduces the potential for a cyanide release scenario and the product must be transported out of the port operational area upon discharge. Accordingly, it is considered likely that Orica will need to provide technical assistance, advice and potentially deploy resources in the unlikely event of that a cyanide release scenario at the port.

CONCLUSION

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

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44.0 PORT OF BELAWAN, INDONESIA

24 November 2022

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Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Belawan during November 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, June 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BELAWAN

The port of Belawan is located on the estuary of the Deli and Belawan river in the province of North Sumatera and Medan, Indonesia. It is located approximately 12 km from the center of Medan, the capital of the North Sumatra province. Built in 1890, the port was used to move tobacco between the railway and ocean-going vessels and with the creation of new section in 1907 the Port of Belawan started to be used for foreign goods shipping (World Port Source, 2022). The port is one of the largest in Indonesia and is the main sea transportation gateway for import and export of industrial products. The portis able to handle all types of containers (like RoRo, bulk and break-bulk cargo). The port is under the administration of PT. Pelindo (Persoro) Reginal I Northern Sumatera (LCA, n.d).

The port of Belawan's bulk handling capabilities include three terminal facilities dedicated for fertilizer, cement, and residue of copra, each with lengths of 100 m and 500,000 to 985,000 tons/year handling capacity for these goods. The port has 25 warehouses which cover a total area of 61,474 m sq. The port also includes 23 yards covering a total area of 64,386.96 m sq. and 7 container yards with a total area of 262,490 m sq. (LCA, n.d). Some of the port services include:

- Pilotage, towage, cargo and goods, warehouse, open storage, container yard, operation and rental of handling equipment.

- Stevedoring services in delivering of the cargos to the designated location.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified. Cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code, 2021 (International Maritime Organization [IMO] 2019), to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Indonesia is an IMO Member State since 1961 (IMO, 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation (IMO, 2019), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (Chapter 7) (IMO. 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS). As a member of the IMO, vessels are also required to declare dangerous cargo before arriving/leaving the port.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The Belawan port is considered compliant with the International Ship and Port Security Service Code (ISPS Code) (LCA, n.d). The ISPS code provides a framework through which ships and port facilities are able to detect and rectify the threats posed to a maritime security (IMO, 2019). As a state member of IMO and MARPOL (the international convention for the prevention of pollution of the marine environment by ships from operational or accidental causes), Indonesian port authorities are required to maintain compliance with the safety and operational regulations for the inspection and reporting of an incident involving harmful substance (IMO, 2019)

As per the ‘Regulation of the Minister of Trade No. 7 of 2022’, regarding the distribution and control of hazardous substances, consignors for the distribution of certain hazardous substance and are required to obtain a permit to handle hazardous goods, and must report the distribution results to the regulatory authority (Kenji, n.d). As per the government regulation (No. 74/2001) for hazardous and toxic substance management, the consignor must obtain an appropriate license and ensure suitable storage facilities are available for segregation of substances, and fitted with the appropriate signage/labels.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Indonesia is a state member of IMO and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), and complies with the requirements of IMDG code and STCW emergency, occupational safety, medical care and survival functions (IMO, 2019).

The Indonesia government regulation (No. 74/2001), Article 19, sets the requirements for the management of the hazardous substance storage facility to have an emergency response capacity, management system and handling procedure (Government Regulation of the Republic of Indonesia), 2000).

CONCLUSION

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

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45.0 PORT OF SUBIC BAY, PHILLIPINES

24 November 2022

20360521-port- 045. RevA

Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Subic Bay during November 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, 2021* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF SUBIC BAY

The Port of Subic Bay is located about 82 km northwest of Manila on the eastern shores of the bay of China Sea in southwestern Luzon on the island of the Philippines. The port is operated by Subic Bay Metropolitan Authority (SBMA), who also acts as port authority for the port of Subic Bay. Access to the Port is made through a 644 m wide channel with depth of 40 m and the facility accommodates dry cargo vessel up to 151.5 thousand deadweight tons (DWT) with maximum length of 520 m, beam of 43 m, and draft of 13 m. The port has five anchorage areas (depths range from 27 to 44 m). The port requires pilotage for vessels above 500 Gross Registered Tons (GRT) and all vessels require port authority clearance at least 24 hours before entering the port (World Port Source, 2022).

Three berths are located in the Port of Subic Bay's Subic Shipyard:

- C-Quay which is 300 m long,
- E-1 Quay which is 255 m long,
- E-2 Quay which is 205 m long.

At the port of Subic Bay, the Sattler Pier and the Marine Terminal handle most of the commercial container cargo traffic while the rest of the wharves support the main commercial port of Subic Bay. The Sattler Pier and Marine Terminal Pier are 180 m and 255 m long respectively with alongside depth of 12 m for both. The area coverage for Sattler Pier is approximately 4,400 sq. m and Marine Terminal Pier covers over 15,700 sq. m. Both the Piers combined can handle over 139,000 TEUs per year and contain 70,600 sq. m of covered storage area and 164,000 sq m of open storage yard (World Port Source, 2022).

At the port of Subic Bay, the main port handling equipment consists of:

- Dockside crane
- Container gantries
- Mobile cranes
- Reach stacker
- Grain elevator with bagging machines
- Transtainer
- Forklifts.

The port is compliant with ISPS and deployment of local security services within the port premises is managed by SBMA (LCA, n.d).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica’s Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that “the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code - 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Philippines is an IMO Member State since 1964 (IMO 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation (ECOLEX, n.d), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (IMO, 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As a SOLAS signatory nation, it is obligation of ships to transmit Long-Range Identification and Tracking (LRIT) information. This system provides global identification and tracking of ships for security, safety and protection of marine environment (IMO, 2019).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

As per the resolution A.289 (VIII), '*recommendation on safe practice on dangerous goods in ports and harbours'* (IMCO, 1973), an emergency procedure for the port is required to be developed and implemented that documents the process to be followed, and actions to be taken, in the event of any incident involving dangerous goods within the port area. Further, it also details the requirements for necessary safety equipment and trained personnel.

The Port of Subic Bay is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (IMO, 2019).

CONCLUSION

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

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46.0 PORT OF PORT MORESBY, PNG

24 November 2022

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Author: Joshua Foote Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Port Moresby Bay during November 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol June, 2021 (ICMI 2022), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, 2021* (ICMI 2022) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF PORT MORESBY

The port of Port Moresby is located approximately 300 km south of the Port of Lae on the southern shores of the main island on the Gulf of Papua in the province of the National Capital. With the government of PNG as the sole shareholder, the PNG Ports Corporation Limited is the port authority for Port Moresby and all other port facilities within Papua New Guinea. The PNG Ports Corporation Limited is responsible for managing and controlling the ports whereas the regulatory functions are carried out by the Department of Transport, PNG (World Port Source, 2022).

The following are some of the main features of the port of Port Moresby (Logistic Capacity Assessment, n.d):

- Port Moresby wharves include berth space of approx. 545 m with alongside depths from 3 to 7.5 m.
- The two main wharf berths 1 and 2 are 106 m and 107 m long with alongside depth of 7.5 metres.
- Berth 3A and 3B are 67 m and 113 m long with alongside depths of 3.8 m and 4.5 m respectively. This constitutes the Costal Wharf.
- The container berth 4A is 125 m long with depth of 10.6 m alongside.
- The port also contains two barge ramps of 6 m and 9 m width.

- The storage area of the port at Port Moresby is around 11,700 sq. m with additional open storage of 6,400 sq. m.
- Three sheds at Port Moresby's Main Wharf cover a total area of 4,700 sq. m.
- Coastal shed covers 650 sq. m.
- Port handling equipment includes cranes, a tug master, tractor and forklift operations.

The Port of Port Moresby is ISPS compliant with current ISPS level as 1.

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2020) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code-2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Papua New Guinea is an IMO Member State since 1976 (IMO 2019) and a Safety of Life at Sea Convention 1974 (SOLAS) Signatory Nation (IMO, 2019), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (IMO, 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As an IMO member state and SOLAS signatory nation, it is a requirement of ships to transmit Long-Range Identification and Tracking (LRIT) information. This system provides global identification and tracking of ships for security, safety and protection of the marine environment (IMO, 2019).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

As a state member of IMO and MARPOL 73/78 (the international convention for the prevention of pollution of the marine environment by ships from operational or accidental causes), it ensures the requirements for inspection and reporting of an incident involving harmful substance (IMO, 2019).

The Marchant Shipping (Dangerous Goods) Regulation 2007 of New Papua Guinea requires any dangerous goods to be thoroughly inspected to avoid leakages or spillage before taking over. PNG ports work to the requirements of the International Maritime Organization's International Ship and port Facility Security Code.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Papua New Guinea has been a member state of IMO since 1976 (IMO 2019) and it complies with the requirements of the IMDG code. The product transferred through the port remain sealed within the containers which significantly reduces the potential for a cyanide release scenario and the product must be transported out of the port operational area upon discharge.

As per 'article 17 of Marchant Shipping (Dangerous Goods) Regulation 2007' of Papua New Guinea the owner or agent of the ship is required to ensure that the dangerous goods cargo is accompanied with information providing emergency response and must include contingency plans and specific emergency response information for all type of dangerous goods. Further, the emergency response plan needs to be consistent with safety management system adopted.

CONCLUSION

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

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47.0 PORT OF CAPE TOWN, SOUTH AFRICA

20 December 2022

20360521-port- 047. RevA

Author: Sonam Wangchuk Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the Port of Cape Town during December 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, 2021* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF CAPE TOWN

The port of Cape Town is located on the shore of Table Bay at the north end of Cape Peninsula, approximately 108 km from the Port of Saldhana in South Africa. As a main seaport, the port of Cape Town contributes to the Western Cape's major economy. The Port is located in one of the world's busiest trade routes and contains two major docks. The Ben Schoeman Dock provides home to the container terminal while the Duncan Dock includes multi-purpose terminals, dry dock, repair quay, and a tanker basin. The Port operates 24 hours a day throughout the year. The Duncan Dock entrance is 180 metres wide and approximately 15 metres deep and entrance to Ben Schoeman Dock is 14 metres deep.

There are 34 berths with ship repair facilities. The container terminal at the Ben Schoeman Dock is equipped with a fleet of post-Panamax gantry cranes. Transnet National Ports Authority (TNPA) manages and controls the Port of Cape Town (World Port Source, 2022).

The Port of Cape Town is the Western Cape region's premier port with an area of 253 ha and water area of 9,163 ha (TNPA, n.d). Pilot vessels are used to transfer a pilot, as pilotage is compulsory for all the vessels. Due to the strong wind during Cape winter (April to September), there is a possibility of disrupting cargo and ship working in the port at the harbour and Table Bay. Four tug vessels provide support services and navigation is subject to Vessel Tracking System (Ports and Ships, n.d). South Africa is state member of International Maritime Organization since 1995 (IMO, 2019)

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code - 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

South Africa is an IMO Member State since 1995 (IMO 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation since 1991 (ECOLEX, n.d), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (IMO, 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As a SOLAS signatory nation, it is obligation of ships to transmit Long-Range Identification and Tracking (LRIT) information. This system provides global identification and tracking of ships for security, safety and protection of marine environment (IMO, 2019a).

The Transnet National Ports Authority's "Tariff Application for Financial Year 2023/24' highlights on the maintenance and upgradation of vessel tracking system at port which indicates the existence of system to track vessels at the port facility. The tariff methodology issued by the regulator forms an integral part of the regulator framework and sets out the requirements of the tariff application process (TNPA, n.d).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

At the port, it is a requirement that necessary arrangement must be made with the Port Captain to ensure safe handling of all hazardous cargo and dangerous goods (TNPA, 2010). All the South African ports are required to follow the IMDG Code at all times from pre-shipment to place of delivery. Hazardous cargoes are removed or transported without any delay directly to rail/road or direct to ship from rail/road depending on the type and class of hazardous goods. The hazardous cargoes falling under class 3, class 4, class 6, and class 8 are removed within 48 hours from the port (Desk, 2020).

The Port has private security companies available for 24 hours on board services. TNPA installed advanced CCTV for some of the terminals and also Automatic identification System (AIS) that allow ship identification. The Port requires appointment of Port Security Officer and Port Facility Security Officer for each terminal who's responsible for security planning, implementation and maintenance at the port facility (Logistics Capacity Assessment, n.d).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

South Africa is a state member of OPRC 90 and states which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (IMO, 2019b).

Police, ambulances and fire-fighting services are available at the port facility with private security companies available for 24 hours on board service. A 'Shipping Incident Disaster Risk Management Plan' was amended by City of Cape Town in the year 2014 with the purpose to outline the function of organisation in dealing with hazards related to shipping and maritime operations at sea adjacent to the municipal area. The Plan also covers any other type of emergency involving vessels or marine structures. The disaster risk management plan sets out requirements and responsibilities concerning emergency plan for each organisation including TNPA. The plan also sets out requirement to develop specific operating procedures to facilitate response to any shipping incident/emergency occurrence (City of Cape Town, 2014).

CONCLUSION

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

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48.0 PORT OF DURBAN, SOUTH AFRICA		21 December 2022
		20360521-port- 048. RevA
Author: Sonam Wangchuk	Approved:	Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Durban during December 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, 2021* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF DURBAN

The port of Durban is located on the east coast of South Africa, and around 165 km southwest of the Port of Richard Bay. Occupying an area of approximately 1,850 ha, the port operates 24 hours a day through out the year. The entrance channel to the port is 122 metres wide maintained at 12.8 metres depth of water. The port of Durban operates under the following limitations:

- Ships are restricted during the daylight to 243.8 m length with width of 35 m and a draught of 11.9m or 12.2 m depending on the tide and harbour master's clearance.
- Night restriction for a ship with length of 200 m, a beam of 26m, and draught limit of 11.6m applies.
- Necessary consultation is required with harbour master for permission to enter port.
- Pilotage is compulsory for all ship vessels with a helicopter and pilot boats supporting the transfer of pilots.
- All the shipping movement inside the port limit is subject to vessel tracking system (VTS) controlled by Millennium Tower on the Bluff.

The port facilities consist of five business units managed by Transnet Port Terminals (TPT) and operates on a common user basis. The Durban Container Terminal (DCT) is one of the business units managed by TPT and one of the busiest and largest of its kind at the port. The DCT has 2,128 m of quayside which is further divided into seven berths (Freight Transport Data Bank, n.d).

The port consists of extensive ship repair facilities of two compartments with total length of 352 m and width 33.5 m. Five electric cranes from 10 tons to 50 tons capacity are used (Ports & Ships, n.d). The Port of Durban has 59 berths and vessels up to 300 m long and 37 m wide can enter the port without any hinderance. Transnet National Ports Authority acts as Port Authority. The repair facilities consist of (World Port Source, 2022):

- A graving dock with berthing distance of 79 m with depth of 11.3 m
- A repair quay with berthing distance 79 m and 6.1 m depth
- A ship repair jetty with berthing distance 413 m with 8.5 m depth
- A department repair jetty with berthing distance of 152 m with 4.8 m.

South Africa is state member of International Maritime Organization since 1995 (IMO, 2019)

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code - 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

South Africa is an IMO Member State since 1995 (IMO 2019) and a Safety of Life at Sea (SOLAS) Signatory Nation since 1991 (ECOLEX, n.d), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (IMO, 2019).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As a SOLAS signatory nation, it is obligation of ships to transmit Long-Range Identification and Tracking (LRIT) information. This system provides global identification and tracking of ships for security, safety and protection of marine environment (IMO, 2019a).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The port employs private security companies, who are available 24-hours, including for on board services. TNPA has installed advanced CCTV for some of the terminals and also Automatic Identification System (AIS) that allow ship identification. The port requires the appointment of a Port Security Officer and Port Facility Security Officer for each terminal. This person is responsible for security planning, implementation and maintenance at the port facility. Over 120 cameras are used around the port facilities. The command and control system helps in smart object detection, item tracking and recording sensors (Logistics Capacity Assessment, n.d).

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

All the South African ports are required to adhere with the IMDG Code at all times. Hazardous cargoes are removed or transported without any delay directly to rail/road or direct to ship from rail/road depending on the type and class of hazardous goods. The hazardous cargoes falling under class 3, class 4, class 6, and class 8 are removed and transported within 48 hours from the port (Desk, 2020).

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

A fireman remains on duty at all tanker and bunker berths while vessels are working cargoes (Logistic Capacity Assessment, n.d). South Africa is a state member of OPRC 90 and states which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises (IMO, 2019b).

As per the EMP Guidelines developed for the port of Durban, all personnel entering or working in the port site must undergo an induction/training relevant to environmental, safety, health and security issues, and site emergency plans (TNPA, n.d).

CONCLUSION

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

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49.0 PORT OF BEIRA, MOZAMBIQUE

21 December 2022

20360521-port- 049. RevA

Author: Sonam Wangchuk Approved: Mike Woods

PORT DUE DILIGENCE EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Beira during December 2022, on behalf of Orica Australia Pty Ltd (Orica).

The assessment was reviewed by Mike Woods, who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (ICMI 2021), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's *Auditor Guidance for Use of Cyanide Transportation Verification Protocol, 2021* (ICMI 2021) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. Based on the evidence reviewed, this due diligence did not find issues of concern regarding the management of solid sodium cyanide product. This assessment should not be a final acceptance of for future work; rather it is recommended that Orica continue to review and monitor performance periodically and implement an adaptive management process.

OVERVIEW OF THE PORT OF BEIRA

The port of Beira lies on the northern shores of the Mozambique Channel of the Indian Ocean and is the second largest port in Mozambique. The port is in the Sofala Province at the mouth of the Pungoe River and approximately 319 km from the Zimbabwe border. The port is accessed via the Macuti Channel (11 m depth) which remains open throughout day and night (24 hours). However, there is some limitation on the nighttime navigation. As the River constantly changes banks and shoals, Vessels entering must anchor at the bar to seek support before entering the port. The port contains a 1,994 metre wharf which has 11 berths. The port of Beira has the following features (World Port Source, 2022):

- Container and multi-purpose terminals have 645 m long berths with depths of 12 m and are supported by 36 m gantry cranes.
- The terminal provides two covered sheds (11,000 sq. m) with the capacity of 100,000 TEUs of containerised cargo per year.
- The port also provides a 200,000 sq metre container yard with 144 reefer points and can accommodate 3,117 TEUs and IMDG dangerous goods cargoes.
- Port facilities also include an 8,400 sq metre fully secured transit warehouse with 3,700 sq metres of covered storage area.

- The port's general cargo terminal has the capacity to handle 2.3 million metric tons of cargo in a year and has a 670-metre wharf with four berthing positions with 10 metres depth each.
- The general cargo storage area consists of five warehouses covering 15,000 sq metre and 12,000 sq metre open paved area, and additional 175,000 sq metres of storage area.
- The port also has dry dock for vessels up to 110 metres long and provides ferry services carrying passengers.

The port of Beira operates under the management and authority of Portos e Caminhos de Ferro de Mocambique, E.P. Mozambique is a state member of International Maritime Organization (IMO) since 1979 (IMO, 2019) and International Convention for the Safety of Life at Sea (SOLAS) signatory nation since 1990 (ECOLEX, n.d).

ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica's Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points procedure (Orica 2016b) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost-effective delivery system to customer sites and Orica stock points globally. This procedure applies to the selection of delivery routes for Orica sodium cyanide and states that "the selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

The port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (United Nations 2019) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail (National Transport Commission [NTC] 2022) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica's Carrier Assessment-Procedure and Questionnaire (Orica 2016a) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained.

Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the International Maritime Dangerous Goods (IMDG) Code - 2021, to the destination port. The manifest should contain a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Mozambique is a state member of International Maritime Organization (IMO) since 1979 (IMO, 2019) and International Convention for the Safety of Life at Sea (SOLAS) signatory nation since 1990 (ECOLEX, n.d), thereby requiring the port to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and the SOLAS Convention 1974 (IMO, 2019a).

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring. Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

As a SOLAS signatory nation, it is obligation to transmit Long-Range Identification and Tracking (LRIT) information. This system provides global identification and tracking of ships for security, safety and protection of marine environment (IMO, 2019a).

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

The Port has 350,000 sq. metres of well illuminated container yard with the capacity of 11,200 TEUs and includes a dedicated international maritime dangerous goods (IMDG) storage area (Ports & Ships, n.d).

As part of port security measures, a 6 km electro-welded security fence has been constructed and a CCTV surveillance system is in place. The port complies with international security standards with current ISPS level 1. While handling cargo, necessary safety procedures are in place (Logistic Capacity Assessment, n.d).

In general, port and vessel security are managed through the International Ship and Port Facility Security Code (ISPS Code). The ISPS Code is a comprehensive set of measures to enhance security of ships and port facilities.

The purpose of the ISPS Code is to provide a standardised, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding security measures. The ISPS Code takes the approach that ensuring the security of ships and port facilities is a risk management activity and that, to determine what security measures are appropriate, an assessment of the risks must be made in each particular case.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

Mozambique is a state member of the International Maritime Organization (IMO) since 1979 (IMO, 2019) and International Convention for the Safety of Life at Sea (SOLAS) signatory nation since 1990 (ECOLEX, n.d). The product transferred through the port is solid cyanide within IBCs and within shipping containers, the containers remain sealed which significantly reduces the potential for a cyanide release scenario and the product must be transported out of the port operational area upon discharge. It is considered likely that Orica would need to provide technical assistance, advice and potentially deploy resources in the unlikely event of a cyanide release scenario.

CONCLUSION

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

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APPENDIX C

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