

ICMI Cyanide Code Consigner Supply Chain Summary Audit Report

Cyanco Consignor Re-Certification Audit – Cyanco North American Rail & Truck Supply Chain

Submitted to:

The International Cyanide Management Institute 1400 I Street, NW – Suite 550 Washington, DC 20005 USA

2014-2015 Audit Cycle





Cyanco North American Rail and Truck Supply Chain Summary

Consignor Name & Contact Information

	1. Cyanco Supply Chain Management (Pearland, Texas)
	2. Cyanco Rail Loading / Unloading and Truck Loading Operations
Name of Operations:	(Winnemucca Plant, Houston Plant, Cadillac Terminal)
	3. Transport Nord-Ouest, Inc. Trucking Operations (Val-D'Or,
	Quebec, Canada)
	4. Transport Nord-Ouest, Inc. Interim Storage Operations (Rouyn-
	Noranda, Quebec, Canada)
	Cyanco (HQ):
	9450 Double R Blvd. Suite 2, Reno, Nevada 89445 USA
	Cyanco (ICMC Compliance and Supply Chain Management):
	Max Jones
Names and	Director – EHSS & ICMC
contact	1920 Country Place Parkway, Suite 400
information:	Pearland, TX 77584
	T: (832) 590-3644
	F: (713) 436-5202
	E: max.jones@cyanco.com
	W: www.cyanco.com

Cyanco North American Rail and Truck Supply Chain Description of Consignor Operations & Scope of Certification

Cyanco maintains a corporate office in Reno, Nevada - USA, a solid sodium cyanide plant outside of Houston, Texas - USA, a liquid sodium cyanide production facility near Winnemucca, Nevada, terminal operations in Cadillac, Quebec - Canada, and a business office outside of Montreal, Quebec.

This audit was used to evaluate Cyanco's management of its bulk liquid and solid sodium cyanide shipments in North America. Shipments in the United States and Canada made via truck and rail from the Winnemucca, Houston, and Cadillac facilities to U.S. and Canadian customers, U.S. ports, and the U.S./Mexico border are within scope of this audit.

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Liquid sodium cyanide is produced in the Winnemucca production facility. Product is shipped from this facility to mining customers, Cyanco's Cadillac Terminal, and to destinations in Mexico. The Mexico Supply Chain was not within scope of this audit and is addressed through other ICMC certified supply chains.

Rail deliveries of sodium cyanide solution are made using 20,000 gallon rail tank cars. The 30% sodium cyanide solution is transported on the Union Pacific Railroad (UP) and the Canadian National Railway (CN) in the U.S. and Canada. The Due Diligence evaluation of these two rail carriers is included in the scope of this evaluation and report.

Truck carriers in use to transport solid sodium cyanide from the Cyanco Houston facility include Quality Carriers, Inc. (QC), Trimac Transportation Group (Trimac), and Action Resources (AR). QC, Trimac, and AR are all ICMC-certified signatory transporters (posted as ICMC-certified on ICMI web-site: February 2014 and May 2015).

Sodium cyanide solution is transported by TransWood Carriers from the Winnemucca Plant in Nevada (USA) and by Transport Nord-Ouest, Inc. (TNO) from the Cadillac Terminal in Quebec (Canada). TransWood is an ICMC-Signatory company that has been ICMC certified since 2006 and was most recently re-certified in 2013. TNO was originally audited in 2013 and was found to be fully ICMC-compliant. TNO was re-audited as part of the re-certification audit. The TNO Interim Storage facility in Rouyn-Noranda, Quebec, Canada was audited separately in January 2015. The results of the TNO on-site audits in Val-D'Or and Rouyn-Noranda are included in this report.

Cyanco has developed formal manuals, procedures, and practices that ensure that all ICMI International Cyanide Management Code requirements are fulfilled.

Audit Information – Cyanco Rail and Truck Supply Chain

The ICMC audit of Cyanco as a Consignor/Transporter for its North American Rail and Truck Supply Chain was performed by an independent 3rd-party auditor who is pre-approved by the ICMI as a Lead Auditor for all types of ICMC audits and as a Technical Expert for ICMC audits of cyanide transportation and production operations.

The ICMC certification audit of Cyanco as a Consignor/Transporter was conducted on multiple dates in 2014. Cyanco's management of the supply chain including rail and truck loading, tracking, and emergency response preparedness was audited in Winnemucca and Houston in April 2014. Evaluations of Cyanco and TNO trucking operations were conducted in May and September 2014. Due diligence assessments of the UP and CN rail carriers were conducted in September and

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October 2014. The on-site assessment of the TNO Interim Storage facility in Rouyn-Noranda was performed in January 2015.

Cyanco's procedures, policies and planned transportation management practices for its Rail and Truck Supply Chain were evaluated against the ICMI International Cyanide Management Code requirements, as documented in the ICMI *Cyanide Transportation ICMC Verification Protocol*. The audit was conducted through observations of operations in the U.S. and Canada, a review of records and documentation, and discussions and interviews with multiple individuals in crossfunctional roles at Cyanco and its supply chain partners. The detailed results contained in this report are limited to the results from the Cyanco and TNO audits. The Due Diligence information for the UP and CN railroads is also included in this report.

The results of this ICMC certification audit and the related due diligence reviews indicate that Cyanco and its North American Rail and Truck Supply Chain are in FULL COMPLIANCE with ICMC transportation requirements.

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Cyanco North American Rail and Truck Supply chain – Auditor's Finding

The Cyanco North American Rail and Truck Supply chain is:

☑ in full compliance

in substantial compliance not in compliance

with the ICMC requirements of the International Cyanide Management Code.

The operations included in this audit have not experienced any significant cyanide incidents, releases, or exposures since the supply chain was originally certified in 2011. The operations were found to have been in compliance with the ICMI Cyanide Code since the previous ICMC certification in 2011.

Audit Company:	MSS Code Certification Service
	www.mss-team.com
Lead / Technical Auditor:	Nicole Jurczyk
	E-mail: CodeAudits@mss-team.com
Date(s) of Audit	April 14-16, May 12-15, September 9, 2014, January 21,
	2015; Due Diligence Assessments: September and October
	2014

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Certification 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 Certification Auditors.

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

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1. TRANSPORT: Transport cyanide in a manner that minimizes the potential for

accidents and releases.

Transport Practice 1.1: Select cyanide transport routes to minimize the potential for

accidents and releases.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 1.1

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco has implemented a process for selecting transport routes that minimize the potential for accidents and releases. The Cyanco International Cyanide Management Code Compliance Manual (ICMC Manual) defines that all ICMC criteria must be considered during the planning of shipping routes. Examples were available showing that Cyanco Leadership evaluated transportation partners, route selection processes, and emergency response capabilities to confirm suitability of the transportation partners and the routes chosen. The ICMC Manual states that appropriate risk considerations are to be made for each type of mode used.

Interviews were conducted to confirm that before Cyanco initially qualifies a new customer for sodium cyanide, they follow a standard practice to determine that the cyanide can be safely delivered to the customer mine site. Cyanco does not control the routing of shipments via rail; however they do choose the shipping locations, receiving locations, and rail carriers.

Cyanco seeks input from communities, other stakeholders and applicable governmental agencies in the selection of routes and the development of risk management measures. Records were available to demonstrate that Cyanco personnel have met with transportation partners and local stakeholders to seek input from communities, non-governmental organizations, and governmental authorities in the U.S. and Canada to seek input into the planning for their transportation supply chains.

Cyanco uses formal policies, procedures, and contractual terms and conditions with transportation partners to ensure that cyanide is appropriately handled and transported throughout the supply chain.

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Cyanco transports bulk liquid sodium cyanide solution by rail from the Cyanco Winnemucca rail sidings. The Cyanco Winnemucca rail loading operations, Cyanco Houston rail and truck loading operations, and the Cyanco Cadillac trans-loading operations were all audited as part of this supply chain certification audit. All locations were evaluated and found to be suitable and secure during the audits. Cyanco transports solid sodium cyanide from the Chocolate Bayou Plant of Ascend Performance Materials at Alvin/Texas to multiple destinations. The plant ships product in rail sparger cars, ISO containers, and one metric ton bag/boxes packed into rail box cars and 20-foot intermodal containers.

Cyanco obtains necessary governmental approvals and export / import licenses for international shipments. Extensive interactions with applicable government agencies are required during the import approval process. Canada requires the development of an official emergency response plan that is called an Emergency Response Assistance Plan (ERAP) which is on file with the Canadian Government. The rail routes are pre-designated routes used for all hazardous material shipments. Cyanco also interacts with stakeholders through full simulation emergency response drills, participation in the Local Emergency Planning Committee (LEPC) in Winnemucca, and participation in a Community Advisory Panel (CAP) group near the Cadillac Terminal.

Cyanco trains community responders and hospitals in Winnemucca, Cadillac, Alvin and Houston. Cyanco uses its documented procedures and formal contracts with safety, health, environmental, and security terms and conditions to ensure that cyanide is appropriately handled and transported by its transportation partners.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

Cyanco maintains a documented route selection process for TNO transportation routes that takes into account population density, infrastructure, pitch & grade, proximity to water bodies, and the prevalence and likelihood of poor weather and resulting poor driving conditions. Cyanco and TNO personnel work together with mining customers to determine the safest and best route for transport. Procedures call for driver feedback and routes are re-evaluated when driving conditions change, or when driver feedback suggests that this is necessary. The most recent evaluation of all routes was done in 2014.

Interviews with drivers and management personnel were used to confirm that feedback about driving conditions is communicated daily, as needed. Special conditions noted by customers are

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noted and communicated to all drivers assigned to the route. The routes driven by TNO vary in length. Drivers can often complete more than one trip in a day, although a small number of routes are long distance trips.

Risks such as pitch and grade of roads, traffic congestion, seasonal traffic issues (winter weather and summer tourist congestion), and proximity to water bodies were considered during the development of the routes. In some cases the pitch and grade of the roads are significant and transit through cities is considered to be lower risk. Stakeholder input (Cyanco, mine customers, and local authorities) is considered when routes are determined. Records were available to show that Cyanco and TNO participate in meetings together with their mining customers. The results of these meetings are used in the overall cyanide delivery planning processes. Appropriate risk mitigation measures are used and records of risk mitigation decisions are maintained. Weather conditions are constantly monitored and deliveries are postponed if a route is considered to be unsafe. Drivers are empowered to stop a delivery if the conditions are considered to be unsafe. Interviews were used to also confirm that drivers adhere to designated routes and request authorization prior to deviating from the established routes.

Cyanco coordinates emergency response for cyanide deliveries made by TNO. Cyanco also coordinates communications with local emergency responders and advises them of their role should there be an emergency situation. No subcontractors are used by TNO.

<u>Transport Practice 1.2</u> Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 1.2

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco uses only trained, qualified and licensed operators and companies to transport its products. Cyanco ensures that its transportation partners in its NA Rail and Truck Supply Chain are compliant with ICMC requirements and are assessed by auditors during either certification audits (trucking transporters and interim storage) or due diligence audits (ports and Rail and Truck Supply Chain carriers).

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Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

TNO maintains a policies and procedures manual for the transportation of sodium cyanide. In this manual the requirement to only use qualified "Class 1" drivers who have received appropriate operational and safety training.

Interviews with drivers, dispatch, management, and maintenance personnel were used to confirm that personnel operating cyanide transportation equipment can perform their jobs safely and appropriately. Training related to cyanide and the delivery of cyanide is given by Cyanco and TNO Management personnel. Records were available for review.

TNO maintains training management processes to ensure that driver training is up-to-date. Trucks are loaded by Cyanco operators and unloaded by TNO drivers. Drivers showed very good awareness of unloading procedures and of emergency shut-off procedures that would help mitigate the risk of having a cyanide release during an unplanned event. No cyanide handling equipment is used by TNO. The TNO procedures manual prohibits the use of sub-contractors for cyanide transport.

<u>Transport Practice 1.3:</u> Ensure that transport equipment is suitable for the cyanide shipment.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 1.3

not in compliance with

Summarize the basis for this Finding:

Cyanco uses only supply chain partners with equipment designed and maintained to operate within the loads it is handling. The Cyanco ICMC Manual states that Cyanco reviews all transportation partners to ensure that ICMC transportation requirements are fulfilled.

Loading activities and shipment records were reviewed during the audit in Winnemucca, Houston, and Cadillac to confirm that standard weights within the capacity of the intermodal containers, tractors, trailers, ISO tanks, rail tank cars and chassis were being shipped. ISO weight capacities

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and the fulfillment of ISO tank inspection requirements were reviewed during the audit and were found to be compliant. Cyanco uses only authorized packaging for its sodium cyanide shipments.

Cyanco is using a modified bulk rail tank car for the rail segments. According to interviews with Cyanco personnel, Cyanco works closely with the rail car manufacturers to develop appropriate specifications for the modified rail cars used for cyanide transport. The modifications of the rail cars to eliminate the bottom load-out valve are done to prevent accidental loss of the material in case of derailment. The modifications also reduce the risk of unauthorized unloading of the material.

Each modified rail tank car goes through a verification and acceptance process when it is ready to be put into service. The rail cars must also go through what is known as an OT-5 approval process before they can be accepted into service by the rail partners. Interview discussions and records showed that rail car specifications were appropriate for the load and the material being shipped.

According to interviews with Cyanco and warehouse personnel who load the van trailers, intermodal containers, and ISO tanks, standard weights are loaded and standard blocking and bracing configurations are used for van trailers and intermodal containers. Shipping paperwork was reviewed during the audit and showed the number of packages shipped and the weight of the cargo. This information is used by transportation partners to ensure that overloading does not occur.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

TNO equipment was found to be in very good condition and was deemed suitable for delivering bulk liquid cyanide solution. The tractors and trailers are enhanced with upgraded equipment and heavy duty frames to ensure safe travel over rough terrain to the mine sites. Tires are replaced on a frequent basis and regular maintenance activities and inspections are conducted. Safety and emergency shut-off systems are designed into the delivery equipment and were found to be appropriate for mitigating the risk of chemical spill. Loading of the trucks is done by Cyanco personnel. Records were available to demonstrate that equipment is not being overloaded.

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<u>Transport Practice 1.4:</u> Develop and implement a safety program for transport of cyanide.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 1.4

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Formal procedures were available for all loading operations at the three Cyanco facilities audited as part of this supply chain. Bulk railcar loading procedures call for the sealing of the dome on the railcars after loading them with sodium cyanide solution in Winnemucca or with solid sodium cyanide briquettes in Houston. The seal numbers are recorded on the shipping paperwork according to loading procedures. Records were available to confirm this practice. The number UN3414 for liquid sodium cyanide or UN 1689 for solid sodium cyanide is displayed on all packaging and rail cars. Records were available to show that Cyanco worked with appropriate governmental agencies to ensure that rail car placards were correct and compliant with regulations.

For the truck portion of the supply chain van trailers, intermodal containers, and ISO tanks are loaded with standard blocking and bracing configurations. Cyanco uses UN 1689 placards to identify the shipments as sodium cyanide, as required by local regulations and international standards. Section 3.1 of the ICMC Manual addresses this requirement. Proper placarding and labeling of semi-bulk packages, intermodal containers, van trailers, and ISO tanks were observed throughout the supply chain audits. Records were available to demonstrate that the applicable requirements of each of the Safety Program sections of the Cyanide Code had been fulfilled.

Records were available to demonstrate that the applicable requirements of each of the ICMC Safety Program sections had been fulfilled. Rail cars, trucks, and trailers are inspected prior to shipment. Completed checklists from were available for review and were acceptable at all locations audited. Cyanco tracks, but does not perform maintenance of its rail cars. This is done by approved rail maintenance shops.

Limitations on worker hours in the U.S. / Canadian rail and trucking industry are strictly regulated and enforced by the respective governments. U.S. and Canadian federal regulations require that railroads and trucking companies conduct random drug and alcohol testing and that drug abuse prevention programs are maintained. Cyanco also has these requirements as part of its contractual standard terms and conditions.

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Cyanco has implemented a safety program for cyanide transport that includes all ICMC required considerations. The Cyanco ICMC Manual states that Cyanco confirms that its transportation partners are in compliance with all ICMC requirements.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

TNO has a formal safety program that clearly addresses all ICMC safety program requirements. Formal procedures and training programs are used to ensure that cyanide is transported in a manner that is safe and protective of the transportation equipment. Liquid cyanide solution is transported in bulk tanker trailers using UN 3414 shipping placards for sodium cyanide solution on all sides of the truck. Vehicle inspections are done prior to every shipment and maintenance is performed approximately every 30-90 days, depending on equipment type. Maintenance records were found to be complete. Driver hours are limited by Canadian transportation regulations. TNO monitors driver hours to ensure compliance.

Interviews were conducted with drivers and procedures were reviewed during the audit to confirm that drivers are empowered to modify or suspend a shipment if unsafe conditions exist. Such a change in delivery plans would be done in close coordination with the TNO dispatcher, Cyanco personnel, and with the mining customer. Random drug and alcohol testing is done in accordance with Canadian regulations. Records were available to show that all parts of the TNO safety program are effectively being implemented.

<u>Transport Practice 1.5:</u> Follow international standards for transportation of cyanide by sea and air.

 \square in full compliance with

The operation is in substantial compliance with Transport Practice 1.5

not in compliance with

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No shipments are made via air or sea in this supply chain. All audit results pertaining to sea shipments can be found in the Cyanco Global Ocean Supply Chain audit report which was most recently posted on the ICMI web-site in 2014.

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

☑ in full compliance with

The operation is in substantial compliance with **Transport Practice 1.6**

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco personnel at the three facilities audited maintain communications with truck drivers making cyanide deliveries. Depending on the location, this communication is either direct through a PeopleNet communication system or indirect through the dispatcher of the trucking partner. All drivers have communication equipment consisting of at least cell or satellite phones, and most drivers have multiple communication systems available to them at all times.

Cyanco contracts with a rail tracking service provider who uses a secure web-based rail car tracking system to track the movement of Cyanco and other rail cars. Appropriate action is taken to ensure that cyanide shipments keep moving, stay on pre-designated routes, and that their location can always be confirmed. The daily tracking reports were reviewed during the audit and confirmation was made that railcars are being tracked continuously from the point at which they are put into service and enter the fleet. Cyanco also tracks all ISO tanks and tank truck trailers using GPS and other tracking equipment.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

Communication with TNO vehicles during the cyanide transportation is done using mobile phones and satellite phones. Trucks are in contact at all times with dispatch by cell phone, satellite phone, or PeopleNet in addition to being tracked by Skybitz Global Positioning System (GPS). A waybill accompanies the transportation which includes chain of custody data such as container numbers, waybill numbers, shipping documentation, MSDS, packing list, bill of lading, customs declarations, producer invoice, copy of lease agreement etc.

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The need for a satellite phone is determined when the truck is dispatched. All communication equipment is confirmed to be operational at the start of each trip. Cell phone blackout areas are identified by Cyanco during the route planning process. The dispatcher tracks all shipments on a continual basis and ensures that drivers have working satellite phones when dispatched on routes with known cell phone black out areas.

2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.

<u>Transport Practice 2.1:</u> Store cyanide in a manner that minimizes the potential for accidental releases.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 2.1

not in compliance with

Summarize the basis for this Finding:

Interim storage activities in this supply chain, as defined by ICMI, take place at IsoChem Logistics, LLC in Houston Texas, at Cyanco production and trans-loading facilities, and at the TNO interim storage facility in Rouyn-Noranda, Quebec, Canada. In Houston, intermodal containers and Iso tanks are transported to IsoChem from the Cyanco Houston-area production plant. IsoChem underwent an ICMC audit as part of the Supply Chain ICMC certification process.

Intermodal shipping containers and ISO tank shipping containers are stored in a segregated part of the IsoChem storage facility. The IsoChem President who controls the storage locations and security access of the facility showed excellent awareness of the need to segregate cyanide from incompatible chemicals such as acids, strong oxidizers, and explosives. Placards and warning signs were posted at the facility notifying workers that cyanide is present, and that open flames, smoking, eating and drinking are not allowed in the area. There is no handling of the intermodal and ISO tank containers other than industrial-sized forklift movements. Personal protective equipment requirements for the material storage and handling activities are posted outside the cyanide storage area.

The facility is secured by a fence and locked gate. An additional secure area for the cyanide containers has been established within the larger storage yard. Access to the high security area requires heavy equipment and job-specific authorization. Security at the facility was deemed to be acceptable. The cyanide is stored in the intermodal and ISO shipping containers. Containers are not opened at the IsoChem facility.

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The containers are stored at the highest elevation in an outdoor container yard. Containers are maintained on a series of railroad ties to provide further protection from the risk of being exposed to standing water. Sodium Cyanide packages within the intermodal shipping containers are comprised of a bag-in-box construction that offers additional protection against water intrusion. ISO tanks are sealed and are constructed to be water-tight.

The Winnemucca, Houston, and Cadillac facilities were all audited during this evaluation and separately according to the ICMC Production Protocol. All three locations were found to be in full compliance with all ICMC requirements.

TNO Audit Results

The TNO interim storage facility is a fenced in truck parking location within a larger industrial truck yard that is used by TNO and other companies. TNO, per Cyanco instructions, constructed a cyanide-specific ICMC-compliant storage location in 2014. The interim storage fenced-in portion of the truck yard is separated physically from other parking areas and has all ICMC required signage. The storage area is locked when in use and access to the area is limited to TNO Drivers and the Facility Manager / Dispatcher. Signs clearly show that sodium cyanide is present, and that smoking, open flames, eating, and drinking are prohibited. Signs also show what personal protective equipment is required and that only authorized personnel may enter the area.

The TNO facility is secured by a locked gate. Access to the area is limited to Drivers and the Facility Manager. Additionally, seals are applied to all loaded and empty trailers to further protect against unintentional and/or unauthorized contact with cyanide. The TNO storage area is limited in size and is only used for the interim storage of cyanide trailers. No other materials are stored in this fenced in area. The storage of other materials in the area is prohibited procedurally. Employee awareness of this requirement was very good.

The TNO facility is only used for loaded and empty cyanide tank trailers. The trailers are sealed and are not opened at this location. There are no water bodies near the TNO facility.

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3. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities

<u>Transport Practice 3.1:</u> Prepare detailed emergency response plans for potential cyanide

releases.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 3.1

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco has developed and implemented a Global Transportation Emergency Response Plan (GTERP) that is appropriate for its Global cyanide supply chains. The GTERP includes details regarding the response procedures to be used in each region of the world, each mode of transportation, and type of incident. The GTERP was last updated in 2014. The notification numbers are updated every 6 months and the rest of the plan is reviewed annually and updated as necessary.

Emergency response plans were reviewed during this audit. The GTERP considers the physical and chemical form of the cyanide. Both liquid and solid sodium cyanide are shipped using this supply chain. Emergency response procedures address actions to be taken in response to both types of sodium cyanide spills.

The GTERP includes descriptions of response actions, as appropriate for the anticipated emergency situations. Cyanco also contracts with professional emergency response and remediation firms in the countries into which it ships to ensure that local emergency response is appropriate for the country involved. The Cyanco GTERP is universally applicable to all types of emergencies. All of the plans and emergency response information clearly outline the roles and responsibilities of internal and external responders.

In addition to Cyanco internal emergency response procedures, Cyanco contracts with an emergency response company to maintain the Emergency Response Assistance Plan (ERAP), in accordance with Canadian law. Interviews were held with the contractor that maintains this information. Information was up-to-date and had been shared with relevant parties.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site

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audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

TNO maintains a cyanide manual and procedures document that includes a section on emergency response for cyanide incidents. The emergency response section of the document specifically states what actions are to be taken in the event of a cyanide incident, either on the road or at the TNO interim storage facility. The document is reviewed and updated, as necessary. The last revisions were made in 2014. The document was found to be up-to-date and appropriate for this liquid sodium cyanide transportation operation.

<u>Transport Practice 3.2:</u> Designate appropriate response personnel and commit necessary resources for emergency response.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 3.2

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco has provided emergency response training to transportation partners and ensures that its partners also provide additional emergency response training to their personnel. This confirmation is done through on-site auditing and Due Diligence review.

The roles and responsibilities of relevant internal and external personnel are clearly described in the Cyanco emergency response plans. Current emergency response procedures state that Technical Advisory Team (TAT) Rapid Response Kits are maintained by emergency response contractors. Information is available regarding the contents of these emergency kits. The types of equipment maintained were found to be appropriate by the auditor.

Cyanco ensures through contractual terms and periodic review that the emergency response equipment maintained by its emergency response provider is available at all times. Cyanco uses using formal policies, procedures, and contracts with safety, health, environmental, and security terms and conditions to ensure that cyanide is appropriately handled and transported by its transportation partners.

In accordance with Canadian regulations, additional information regarding emergency response resources and their qualifications in contained in the Cyanco's ERAP, an emergency response planning document maintained on file with the Canadian government.

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Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

The roles and responsibilities of relevant internal and external personnel are clearly described in the emergency plan. TNO drivers, managers, and maintenance shop personnel receive an appropriate level of training to enable them to fulfill their role in emergency response. Formal emergency response training is refreshed annually.

Drivers were interviewed and awareness of emergency procedures was appropriate. The emergency plan defines what equipment must be available in each truck and extra personal protective equipment is available in each bag. Equipment is checked as part of the pre-trip inspection process.

<u>Transport Practice 3.3:</u> Develop procedures for internal and external emergency

notification and reporting.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 3.3

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco has developed procedures and maintains current contact information for notifying regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency. The GTERP and the ERAP (for Canadian shipments) were reviewed during the audit and were found to contain all necessary contact information.

The Cyanco ICMC Manual requires that internal and external emergency notification and reporting procedures are kept current. Contact numbers and reporting information is reviewed at least annually, or as needed.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site

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audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

The notification procedures, including telephone numbers, are described in the Emergency Response plans. Cyanco and TNO information and other emergency contact information is contained in the emergency plans. Additionally, the Cyanco Emergency Response Assistance Plan (ERAP) is updated annually, as per Canadian governmental regulations. The information in the emergency plans are reviewed as necessary, but at least on an annual basis.

Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

☑ in full compliance with

The operation is in substantial compliance with **Transport Practice 3.4**

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Specific details regarding the remediation, neutralization, decontamination, and disposal of cleanup debris are contained within the Cyanco emergency response procedures. Extensive descriptions of necessary action steps depending on the incident scenario are clearly outlined in the documents.

Cyanco personnel showed a high level of awareness that the use of treatment chemicals is prohibited if cyanide spills into surface waters. Cyanco emergency response procedures specifically prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide for treating a cyanide spill into surface water. Section 3.4 of the ICMC Manual specifically bans the use of treatment chemicals for spills into surface water.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

The TNO emergency response plan includes text that addresses the remediation and neutralization of cyanide solutions. General information is given and the hazards associated with using cyanide

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treatment chemicals are recognized. Neutralization chemicals are not allowed to be used in or near surface water bodies. There are no water bodies near the TNO interim storage facility.

<u>Transport Practice 3.5:</u> Periodically evaluate response procedures and

capabilities and revise them as needed.

☑ in full compliance with

The operation is in substantial compliance with Transport Practice 3.5

not in compliance with

Summarize the basis for this Finding:

Cyanco Audit Results

Cyanco periodically reviews its emergency response plans and evaluates the plan's adequacy. The ICMC Manual requires that table top simulations be run annually and that emergency response drills are run every 3-5 years. Records were available to demonstrate that Cyanco has held emergency response drills with its transportation partners and client mines in 2013 and 2014.

Cyanco reviews and revises its emergency response plans as necessary after responding to an actual emergency and after emergency response drills. Formal action-tracking systems are used to ensure timely and complete close-out of actions following emergency response drills and actual emergencies.

Quality Carriers, Trimac, and Action Resources trucking operations and IsoChem interim storage in Houston, Texas were found to be in compliance with all ICMC requirements during on-site audits that were documents in ICMC certification audit reports posted to the ICMI web-site in 2014. The TNO trucking operation audit results are noted below:

TNO Audit Results

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TNO performs mock simulation drills together with Cyanco and table top emergency response reviews on a regular basis. The most recent mock simulations took place in July 2013 for a trucking accident scenario and in December 2014 for a human exposure scenario at the interim storage facility. According to Canadian law the emergency response procedures are reviewed each year. Driver review of these policies and procedures occur yearly. TNO's health & safety program manual is also reviewed and updated yearly. Procedures and emergency plans are updated as necessary after drills and actual emergencies.

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Rail Carriers & Rail Yards - Summary of Due Diligence **Investigations**

Operational and Audit Information for Rail Carriers and Rail Yards

This report addresses rail and truck transport of sodium cyanide solution from the Cyanco Winnemucca Plant and the Cyanco Cadillac Terminal and the rail and truck transport of solid sodium cyanide from the Cyanco Houston Plant. The two rail transportation partners that are covered under this due diligence investigation are:

- 1) Union Pacific Railroad (UP)
- 2) Canadian National Railway (CN)

The railway that services Cyanco out of the Winnemucca, Nevada and Houston, Texas – USA locations is the Union Pacific Railroad (UP). The Canadian Railway (CN) services the Cadillac Terminal in Quebec, Canada. Security and safety risks are minimized through the use of the shortest possible transit time for the shipments. There are no other choices of rail partners for this rail move as the railroad companies own the track that is used.

The Due Diligence portion of this evaluation included a review of information available for the Union Pacific (UP) and Canadian National (CN) railroads, the two railroads used in this supply chain. The railroads maintain control over routing and employ specific safety measures to ensure the safest transit of hazardous materials possible. The railroads have been certified Responsible Care® Partner companies for more than seven years. As such, their rail management system, including rail yards and interchange point safety and security, has been audited by a 3rd-party auditing firm and has been found to be suitable and effective

Both the CN and UP have extensive information about their safety and security programs on their web-sites. Both companies have strong safety records and are continually improving their ability to monitor hazardous material shipments to ensure that they arrive safely and securely at their destination

The CN and UP are also both part of the TRANSCAER® (Transportation Community Awareness and Emergency Response) organization. Information regarding safety performance and the commitment to safe transportation through communities were reviewed and found to be consistent with Cyanide Code requirements. Rail transport is generally understood to be safer than truck transport. The Association of American Railroads (AAR) evaluations have stated that trucks are

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16 times more likely to be involved in an accident than trains. For this and other reasons, Cyanco has chosen to ship via rail for this segment of its supply chain.

The point of loading the rail cars into the rail system is within the Cyanco Winnemucca and Houston plant sites. These facilities were found to be compliant with ICMC requirements during this certification audit. The rail sidings are within the secure fence-line of the facilities and there is no storage of loaded rail cars outside the secure points of loading. The railroads maintain control over routing and employ specific safety measures to ensure the safest transit of hazardous materials possible.

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UP and CN Rail Carriers and Rail Yards - Auditor's Finding

Due diligence investigations have been performed so that it can reasonably be concluded that rail carriers including rail yards used by Cyanco for sodium cyanide shipments in North America are:

☑ in full compliance

in substantial compliance not in compliance

with the International Cyanide Management Code.

Audit Company:	Management System Solutions, Inc.
	www.mss-team.com
Lead / Technical Auditor:	Nicole Jurczyk
	E-mail: CodeAudits@mss-team.com
Date(s) of Audit:	April 14-16, May 12-15, September 9, 2014, January 21,
	2015; Due Diligence Assessments: September and October
	2014

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

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Name of Operation

Name of Lead Auditor

Name of Lead Auditor

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Description of Due Diligence Information Reviewed for Rail Carriers and Rail Yards

1. TRANSPORT: Transport cyanide in a manner that minimizes the potential for

accidents and releases.

Transport Practice 1.1: Select cyanide transport routes to minimize the potential for

accidents and releases.

☑ consistent with Transport Practice 1.1 The management of

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

The Cyanco rail cars are shipped from Winnemucca and Houston on the Union Pacific Railroad (UP). Those cars that are headed for Cadillac are switched to the Canadian National Railway (CN) in the Proviso, Illinois yard in Chicago. Security and safety risks are minimized through the use of the shortest possible transit time for the shipments. There are no other choices of rail partners for this rail move as the railroad companies own the track that is used.

The railroads maintain control over routing and employ specific safety measures to ensure the safest transit of hazardous materials possible. The railroads have been certified Responsible Care® Partner companies for more than seven years. As such, their rail management system, including rail yards and interchange point safety and security, has been audited by a 3rd-party auditing firm and has been found to be suitable and effective. According to information that is publicly available, the rail yard where the rail cars cross the U.S./Canada border has undergone 3rd-party environmental, health, safety, and security evaluations through the CN Responsible Care® certified management system certification program.

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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.

The management of ☑ consistent with Transport Practice 1.2

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

During this Due Diligence Review it was confirmed that the CN and UP railroads have continued to be certified Responsible Care® Partner companies for more than seven years. As such, their training programs and employee qualification processes have been audited by a 3rd-party auditing firm and have been found to be suitable and effective. The fulfillment of required training is a specific requirement of the Responsible Care Management System (RCMS). Although no railroad training files are maintained by Cyanco, information regarding the safety practices of the CN and UP railroads was available and was reviewed during the audit.

Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment.

The management of ☑ consistent with Transport Practice 1.3

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

The CN & UP railroads maintain Responsible Care Management System® certifications and undergo a full management system audit at least every three years which includes a review that the preventive maintenance program for transportation equipment is suitable, adequate and effective. The proper maintenance of rail equipment is heavily regulated and inspected by the U.S. Federal government, which also helps to ensure fulfillment of rail equipment preventive maintenance and inspection requirements.

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<u>Transport Practice 1.4:</u> Develop and implement a safety program for transport of cyanide.

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

Both the UP and CN are Responsible Care® certified for their safety, health, environmental and security management programs. Adherence to governmental safety regulations such as limits on operator hours and drug testing are evaluated at least every three years by a 3rd—party auditing firm. Limitations on worker hours and drug testing in the U.S. and Canadian rail industry are also strictly regulated and enforced by governmental agencies. The safety programs, including preventive maintenance programs for both companies have been found to be suitable and effective, year after year.

<u>Transport Practice 1.5:</u> Follow international standards for transportation of cyanide by sea and air.

Not applicable.

Summary of the basis for this finding:

No shipments are made via air or sea on this transportation segment.

<u>Transport Practice 1.6:</u> Track cyanide shipments to prevent losses during transport.

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

Both the UP and CN railroads use Data Electronic Interchange (EDI) tracking technology to manage shipments for their customers. Rail shipping paperwork was reviewed during this audit. Accurate descriptions were available showing the type of material, the weight of the shipment, and the shipping and arrival information.

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2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and

interim storage sites to prevent releases and exposures.

<u>Transport Practice 2.1:</u> Store cyanide in a manner that minimizes the potential for

accidental releases.

Not applicable.

Summary of the basis for this finding:

There is no interim storage in this supply chain.

3. EMERGENCY RESPONSE: Protect communities and the environment through the

development of emergency response strategies and

capabilities

<u>Transport Practice 3.1:</u> Prepare detailed emergency response plans for potential cyanide

releases.

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

Information for both rail carriers was reviewed to confirm that they and their affiliates have emergency response plans in place which include the prompt notification of all involved parties. Cyanco provides shipping papers showing the emergency contact information which is then transferred to the hazardous cargo declaration.

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<u>Transport Practice 3.2:</u> Designate appropriate response personnel and commit necessary resources for emergency response.

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

Cyanco offers immediate technical assistance through its contracted emergency response service providers for any cyanide spill, and offers emergency resources for spills that might occur near a Cyanco site. Cyanco contracts with CHEMTREC to ensure that appropriate notifications and emergency response is initiated if there is an incident.

<u>Transport Practice 3.3:</u> Develop procedures for internal and external emergency notification and reporting.

Bulk Rail Transport using UP & CN is: substantially consistent

not consistent

Summary of the basis for this finding:

The CN and UP are both part of the TRANSCAER® (<u>Transportation Community Awareness and Emergency Response</u>) organization which helps with notifications requirements. Cyanco contracts with appropriate organizations to ensure that appropriate notifications and emergency response is initiated if there is an incident on any rail or truck movement.

<u>Transport Practice 3.4:</u> Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

Not applicable.

Summary of the basis for this finding:

Cyanco and its emergency response service providers would lead any remediation efforts involving cyanide. No information regarding this requirement was investigated for CN and UP.

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Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed.

The management of Bulk Rail Transport using UP & CN is: ☑ consistent with Transport Practice 3.5 substantially consistent not consistent

Summary of the basis for this finding:

As part of the rail carrier safety programs such as TRANSCAER® (Transportation Community Awareness and Emergency Response), drills and exercises (not necessarily cyanide specific) are Additionally, both railroads have been certified conducted to test response capabilities. Responsible Care® Partner companies for more than seven years. As such, their emergency response systems have been audited by an independent 3rd-party auditing firm and found to be effective. One requirement of any certified Responsible Care Management System ® is that the emergency response plans be up-to-date and that emergency response plans be tested periodically.

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