

ICMI International Cyanide Management Code <u>Summary Audit Report</u>

DuPont Canada Cyanide Supply Chain Warehouse, Distribution, and Transportation Certification Audit

Submitted to:

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

2012 Audit Cycle



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Canada Supply Chain Summary

Company Summary

Company Names & Contact Information

DuPont Corporation - Canada Supply Chain

Name of Operations: Wilmington, Delaware

USA

Name and contact

information for DuPont

Contact:

Donald Jeffery

Cyanide Business Global Product Stewardship Manager

Email: Donald.W.Jeffery@USA.dupont.com

Tel. (623) 444-2989

6000 autoroute Transcanadienne

Pointe Claire Distribution

Centre Location

Pointe Claire, QC H9R 1B9

Tel. (514) 697-8840

HQ Offices:

1415 Bonhill Road

Unit 16 & 17

Mississauga, ON L5T1R2

TONA Trucking Operation Warehouse Dispatch Location:

> 6000 autoroute Transcanadienne Pointe Claire, QC H9R 1B9

Tel. (514) 697-8846

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Supply Chain Overview

E.I. DuPont de Nemours and Company, Inc. (DuPont) is a science-based company operating in more than 70 countries. DuPont offers a wide range of products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel.

DuPont was one of the original 14 International Cyanide Management Code (ICMC) signatory companies announced on November 3, 2005. As such, DuPont made the commitment to obtain ICMC certification for its Memphis Solid Cyanide Plant and its Warehouse operations. DuPont was the first Cyanide Producer in the world to achieve certification in June 2006 and the operation was re-certified in 2009 and in 2012.

DuPont produces sodium cyanide for use in the gold mining sector at the Memphis, Tennessee plant in the United States. DuPont maintains several cyanide distribution terminals and delivers solid and liquid cyanide to mining customers throughout the world. Cyanide that is distributed through the Canada Supply Chain is brought in from Memphis and from an ICMC Certified Signatory Co-Producer in Europe. The sodium cyanide that is sold to gold mining customers is packaged in 1 ton bag/box packaging and is stored in Pointe Claire, Quebec, Canada (outside of Montreal) prior to being distributed to customers in Canada. The Pointe Claire Distribution Centre (PCDC) is owned by DuPont and is operated by the Huron Services Group. The cyanide is shipped out of the PCDC via truck. The trucking company is TMH Logistics, operating as TONA Transport (TONA). TONA is also owned by the Huron Services Group.

The DuPont Canada Supply Chain for sodium cyanide consists of warehousing activities at the DuPont Pointe Claire Distribution Centre (PCDC) and the TONA trucking operations based out of the PCDC facility. DuPont, PCDC, and TONA personnel were included in this ICMC Certification Audit. PCDC and TONA underwent full on-site ICMC audits and were found to be in full compliance with ICMC requirements. Cyanide arrives directly to the warehouse via rail (a DuPont ICMC Certified Supply Chain - August 2010) and via truck (TONA) from the Port of Montreal (DuPont Global Ocean Supply Chain – August 2010). Confirmation was made that DuPont performed the Due Diligence evaluation of the Port of Montreal, as per standard internal procedures. This on-site Due Diligence evaluation was conducted by DuPont personnel in June 2011. Port operations were found to be acceptable and to be in alignment with ICMC requirements.

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Description of the DuPont Pointe Claire Distribution Centre Warehouse Operation

The warehouse evaluated during this audit is located in Pointe Claire, Quebec, Canada. The DuPont Pointe Claire Distribution Centre (PCDC) was built in 1974 and is owned by DuPont. The facility is 110,000 sq. ft. in size and can receive and ship product by truck and rail. The warehouse is used exclusively by DuPont for storage and distribution of its products. PCDC is one of three DuPont Distribution Centers in Canada operated by the Huron Services Group. The Huron Services Group is a Division of CPC Logistics.

The operation uses a formal multi-site ISO-based management system to organize and administer all activities at the site. The integrated management system has been certified to ISO 9001 and ISO 14001 since the mid-1990s and has also been found to be compliant with Responsible Care® environmental, health, safety, and security requirements. The operation has gone over 25 years without experiencing a lost-time work injury.

PCDC started receiving solid sodium cyanide by truck and rail shipments of solid sodium cyanide in 2011. Sodium cyanide is received into the warehouse in bag/box packaging in either intermodal containers on triple chasses or in railcars. The cyanide is unloaded by PCDC employees and is stored in a covered and well-ventilated warehouse prior to being distributed to customers. The cyanide packaging is not opened by PCDC at any point during the operation.

Outward bound cyanide that is shipped to gold mine customers is loaded into intermodal containers and sent out on triple-axle chasses. The PCDC material unloading, warehousing, and intermodal container loading operations were evaluated during this audit.

Description of the TONA Transport Trucking Operation

The trucking operation audited as part of this certification audit was TMH Logistics, Limited, operating as TONA Transport. TMH Logistics, Ltd. is owned by the Huron Group Limited, the same Group that operates the PCDC warehouse operations. Tractors pulling triple-axle chasses are used to deliver intermodal containers to gold mines and ports in Canada. Drivers are dispatched from a TONA office located in PCDC.

TONA Transport personnel have been transporting DuPont products in Canada safely for many years. Sodium cyanide shipments started in 2011. TONA manages all aspects of the trucking operations including driver selection, training, dispatch, communications, and emergency preparedness and response. Truck tractors and trailers are maintained by local service providers. These service providers were also audited as part of this certification audit.

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Audit Implementation

This report contains information regarding the on-site International Cyanide Management Code (ICMC) Certification Audits conducted of the DuPont Canada Cyanide Supply Chain management activities, of the DuPont Pointe Claire Distribution Centre cyanide warehouse activities, and the TONA Transport trucking operations.

The audit was conducted on August 28-31, 2012 in Pointe Claire, Quebec - Canada. Personnel from DuPont, the DuPont Pointe Claire Distribution Centre (Huron Services Group personnel), and TONA Transport (TMH Logistics and maintenance service providers) were included in the audit. Interviews were conducted, policies and procedures were reviewed, records were evaluated, operations were observed, and equipment and facilities were inspected.

The PCDC warehouse operations were audited fully using the *ICMI Cyanide Production Verification Protocol* (2011). The TONA Transport operations were audited fully using the *ICMI Cyanide Transportation Protocol* (2009). Vendors that maintain tractors and trailers for TONA were also evaluated through interviews, on-site observations of operations and equipment, and a review of maintenance records. DuPont personnel were in attendance throughout the auditing process and were interviewed, as necessary, in order to verify Supply Chain compliance with Production and Transport protocol questions.

The audit was performed by an independent third-party auditor who was pre-approved by the ICMI as a Lead Auditor for all types of International Cyanide Management Code (ICMC) audits and as a technical expert for ICMC audits of cyanide transportation and production operations.

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DuPont Supply Chain Certification Audit - Auditor's Finding and Attestation

Cyanide management practices for the DuPont Canada Supply Chain were evaluated for ICMC compliance using the *ICMI Cyanide Production Verification Protocol* (2011) and *ICMI Cyanide Transportation Protocol* (2009). DuPont, PCDC, and TONA internal Policies, Standards, and Procedures regarding the management of the Cyanide Transportation Supply Chain were reviewed.

The audit was conducted through discussions and interviews with DuPont, PCDC, TONA, and vendor interviews. Operations, facilities, and equipment were physically evaluated. Records regarding shipment tracking, incident tracking, security measures, shipping documentation, community involvement, operational procedures, training, and emergency response records were randomly sampled during the audit and were also found to be acceptable.

All personnel were very well prepared for the audit. The audit team found that the overall level of preparedness and understanding of ICMC requirements was excellent.

The DuPont Canada Sodium Cyanide Supply Chain was found to be in FULL COMPLIANCE with the ICMI International Cyanide Management Code requirements.

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:	August 28-31, 2012

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 Reports accurately describe 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 Verification Protocols for Cyanide Production and Transportation Operations and using standard and accepted practices for health, safety and environmental audits.

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PCDC Warehouse Certification Audit - Auditor's Finding

The DuPont Pointe Claire Distribution Centre warehouse practices were evaluated for ICMI Code compliance using the *ICMI Cyanide Production Verification Protocol (2011)*. PCDC internal Standards, Policies, Practices, and Procedures regarding the management of the operations were also reviewed. Overall warehouse operations, shipment tracking, inventory management, and distribution activities were evaluated. The audit was conducted through discussions and interviews with multiple individuals in cross-functional roles at PCDC (see table on previous page). Records were randomly sampled for all ICMC requirements and were found to be acceptable.

The results of this certification audit indicate that the DuPont Pointe Claire Distribution Centre Cyanide Warehouse Operations are in FULL COMPLIANCE with International Cyanide Management Code requirements.

DuPont Pointe Claire Distribution Centre Warehouse Certification Audit Results

1. OPERATIONS: Design, construct and operate cyanide production facilities to prevent release of cyanide.

<u>Production Practice 1.1</u>: Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.

The operation is **☑** in full compliance with Production Practice 1.1

Summarize the basis for this Finding:

The DuPont Pointe Claire Distribution Centre (PCDC) facility was built using sound, accepted engineering practices in 1974. Its construction followed and met the building code standards for warehouses in 1974. Blueprints were reviewed during the audit and show that the Pointe Claire Provence of Quebec approved the drawings and construction. A formal MOC process was used

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when the cyanide started being stored at this location in 2011. The only structural issue that came up during that process was the need for a new loading dock. The MOC was reviewed during the audit. All critical actions of the plan were found to have been completed. DuPont Engineering personnel have since evaluated the facility and have confirmed that it is suitable for the storage and handling of sodium cyanide as well as the receipt and shipping of cyanide by truck and rail.

There are no cyanide solutions or process equipment at this facility. The floor of the storage area is reinforced concrete. The external walls of the facility are 8" concrete block. The concrete floor of the warehouse was found to be in excellent condition. There are no floor drains in the building. In the event of a spill, spill equipment would be used. The warehouse has a 60,000 gallon storm water containment system. This ensures full containment with sufficient storage capacity in case of storm events bringing large quantities of rain water. In the event that there is a suspected release, water is tested before it is pumped out to city storm drains. Concrete culverts outside of the building lead from the containment system to the city reservoir.

Develop and implement plans and procedures to operate cyanide *Production Practice 1.2:* production facilities in a manner that prevents accidental releases.

The operation is **☑** in full compliance with Production Practice 1.2

Summarize the basis for this Finding:

Standard operating procedures are maintained by the PCDC operation. The operation uses a formal multi-site ISO-based management system to organize and administer all activities at the site. The integrated management system has been certified to ISO 9001 and ISO 14001 since the mid-1990s and has also been found to be compliant with Responsible Care® environmental, health, safety, and security requirements. The operation has gone over 25 years without experiencing a lost-time work injury. The management system is very mature and was found to be operating at a very high level of maturity. Personnel had a very high level of understanding of management system concepts and risk management practices.

The procedures, work instructions, and forms are well-organized and were readily available for review during the audit. The procedures were sampled throughout the audit and were found to be appropriate for ensuring environmentally sound operation of the facility.

PCDC maintains approximately sixty operational procedures and fourteen emergency procedures. The facility uses formal procedures for sodium cyanide management. Specific procedures were developed and implemented when sodium cyanide was first brought to the facility. Procedures include: "Sodium Cyanide" [Management], Railcar Loading and Unloading

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Instructions, and Gas Alert Detection procedures. Information necessary for safe cyanide handling was also comprehensively integrated into all necessary site procedures and policies.

The ISO 14001 program is used to evaluate the potential for a spill and implement necessary controls to ensure safe operations. Procedures are also maintained to address emergency situations involving human exposure scenarios. Additionally, emergency plans specifically for the response actions that would be required in the event of a release of sodium cyanide are maintained by DuPont. Operations personnel and emergency response personnel were interviewed and their awareness level of emergency and contingency procedures was very good.

Operating procedures are formally maintained, reviewed at regular frequencies, and approved prior to use. PCDC maintains an integrated Safety, Health, Environment, and Quality (SHEQ) management system that is certified to ISO 9001 and has been assessed by the Canada Chemical Industry (CEFIC) according to the Safety and Quality Assessment Systems (SQAS) program. The appropriate control of operating procedures and the management of change of operating processes is audited at least annually by third-party management system auditors as part of the certification programs to which the DuPont Pointe Claire Distribution Centre subscribes.

The only material handling equipment used at this site is forklifts. Records showed that required maintenance is being completed as planned. Environmental Plans are in place to prevent unauthorized/unregulated discharge to the environment of any cyanide-containing water.

Waste from clean-up activities following a packaging breach would be decontaminated and disposed of according to documented procedures for the decontamination and disposal of contaminated solids. Disposal of contaminated materials is done in accordance with Canadian regulations.

The storage facility is continuously ventilated at all times. Large air vents were designed into the walls and roof lines of the warehouses. Ventilation was found to be appropriate in all storage areas.

There is no storage of cyanide outside of the roofed storage area. Loading, unloading, and material handling is also done under roofed portions of the loading dock. This practice helps to ensure that the potential for cyanide being exposed to moisture is minimized. Additionally, the solid cyanide briquettes are stored in water-tight packaging and the packages are not opened at this facility.

The facility is fenced, gated, and manned 24 hours/day 7 days/week. A security vulnerability assessment was done at the end of June 2012 and the facility security was found to be acceptable. The cyanide producer controls the labeling and packing specifications for all products. Processes exist within the DuPont Corporation to ensure that packaging and labeling are appropriate for the jurisdictions through which the load will pass. The languages printed on the containers, for example, appear in English, the language of the destination country, and also in 6 standard

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international languages including French. All packages and containers observed during the audit had appropriate packaging and labeling.

<u>Production Practice 1.3</u>: Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

The operation is **☐** in full compliance with Production Practice 1.3

Summarize the basis for this Finding:

A physical review of the facility was part of the certification audit. Confirmation was made that all secondary containment areas are appropriate for the operation and are in excellent condition. Inspections of various areas of the facility are conducted on a daily, weekly and monthly basis. Records were sampled and were found to be appropriate. Storm water containment systems are monitored as part of the facility maintenance program. There are no cyanide solution tanks or process solution tanks or piping at this facility. Records showed a checklist of items that are inspected, the name of the inspector, and any observed deficiencies. Actions taken in response to problems in the field were clearly documented in the records.

2. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.

<u>Production Practice 2.1</u>: Develop and implement procedures to protect plant personnel from exposure to cyanide.

The operation is **☐** in full compliance with Production Practice 2.1

Summarize the basis for this Finding:

Worker exposure to cyanide is minimized through the use of personal protective equipment (PPE) and through the safe operation of the facility. There is very little opportunity for human exposure to cyanide at this operation. Only solid sodium cyanide is stored here and packages are not opened. Minimum PPE requirements are defined in the procedures, which were reviewed during the audit. Proper use of PPE was observed in all areas of the operation. All cyanide packaging is sealed.

In the event that a package breaks open or a small spill is discovered, trained workers wearing defined personal protective equipment (PPE) block off the area and clean up the material. If for

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any reason the spill cannot be cleaned up with current resources, it is a large spill or there is reason to believe the cyanide has come in contact with acid or water creating HCN gas, the area will be cleared of staff and the spill response contractor will be called to the scene. This practice was confirmed through interviews with the warehouse material operators.

There is no process equipment at this facility. General PPE requirements for all areas in which cyanide may be present are clearly defined and are well understood by all personnel interviewed.

The Safety, Health, Environment, and Quality (SHEQ) management system is used to manage proposed operational changes. The SHEQ Manager reviews all proposed operational and facility changes to ensure that operations continue to be in compliance with the law and protective of human health and the environment.

Employee involvement is achieved through employee attendance at Safety Meetings. Employee participation in the development and maintenance of safety practices was found to be acceptable.

There are no areas where cyanide gas or dust can be generated during normal operations. Personnel wear dust masks during normal railcar sweeping operations. If, however, there is reason to believe that a cyanide package was been compromised or breached, then emergency procedures are engaged with increased PPE requirements.

PCDC uses personal CN monitors. The monitors are calibrated to the manufacturer's specifications by an outside service provider every 90 days.

The buddy system is used for railcar unloading/loading. This requires that at least two employees are engaged in the activity. For truck unloading there is direct line-of-sight supervision available for the general area. Employees also have radios and access to Management, Security, and Emergency Response Personnel at all times.

Employees' health is screened before they are hired and fitness for duty for forklift drivers is evaluated every 18 months. The Sodium Cyanide procedure calls for disposal of potentially contaminated clothing. Packages are not opened and there the opportunity for exposure to cyanide is very remote. Hazard information is posted on each of the packages through product labeling and designated areas have warning signs to ensure that personnel are aware of potential dangers. Access to storage areas is limited to trained personnel.

All sodium cyanide packages were clearly marked with appropriate labeling and placards. The cyanide storage areas also had additional signs indicating that additional precautions should be taken due to the presence of poisonous materials.

Eating, drinking, smoking, open flames are prohibited where there is a potential for cyanide contamination. This policy is part of the PCDC formal management system procedures.

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Employees showed very good awareness of the restrictions and of the potential dangers of not following the rules. There is a designated break room for eating and drinking.

Production Practice 2.2: Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

The operation is **☑** in full compliance with Production Practice 2.2

Summarize the basis for this Finding:

PCDC maintains comprehensive Emergency Response Plans and procedures for rapid and effective response to cyanide exposure. The procedure for treatment of cyanide exposure is available for a medical emergency responder and the antidote response kit was being properly stored.

Commercially supplied shower and low-pressure eye wash stations were available at the facility. The fire extinguishers, eye wash, and shower units are checked monthly. Records were reviewed and were found to be complete.

The facility has water, oxygen, resuscitator, antidote and a means of communication readily available at the facility. Emergency equipment is inspected on a monthly basis.

PCDC appropriately maintains emergency response equipment and antidote to ensure their availability during an emergency. Recent records of equipment inspections were reviewed during the audit. The methods by which shelf-life medicines and antidotes are managed were also reviewed. Antidote is stored in the Dispatch office, an area that is temperature controlled. The medicine is stored in a manner that protects it from moisture and from light, as recommended by the manufacturer. Emergency response equipment is stored and tested according to manufacturer's recommendations.

Safety Data Sheets and first aid procedures are available to workers in operational areas. Safety procedures that describe how to respond to a cyanide exposure and how to use the medical kit were available.

Cyanide safety training is given annually and employees and supervisors demonstrated a good understanding of the decontamination policy and the need for safety precautions. Upon review of the operations, it was deemed to be highly unlikely that there would be a potential for skin exposure to cyanide. The safety training and procedures of the facility were found to be acceptable. Safety Data Sheets were available in English and French, the languages of the workforce.

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Trained medical emergency response personnel are readily available at Lakeshore General Hospital if it became necessary to transport an exposure victim to a qualified medical facility. Staff at Lakeshore General Hospital was trained by the DuPont North American Product Stewardship Coordinator. According to the documented training program, the training is to be done every three years. The most recent training was completed on June 28, 2012.

Emergency response drills are conducted annually by DuPont and PCDC. Spill and exposure scenarios tested were deemed to be appropriate for the operations. A comprehensive emergency exposure drill was conducted subsequent to this audit in October 2012. The drill was very thorough and records demonstrated that all necessary personnel were involved and that all ICMI requirements were fulfilled.

PCDC and DuPont have documented investigation and reporting requirements for any safety or environmental incident. There have been no exposure incidents to date. In the event that one occurs an Incident Investigation and Classifications and Reporting procedure would be done.

3. MONITORING: Ensure that process controls are protective of the environment.

<u>Production Practice 3.1</u>: Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The operation is \square in full compliance with Production Practice 3.1

Summarize the basis for this Finding:

The only possibility that the facility would have an indirect discharge to surface water would be through the discharge of contaminated storm water in the case of a spill. Procedures call for the testing of storm water in case of potential contamination. According to procedures, this would be done when water is taken away by an authorized hazardous materials remediation service provider.

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4. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Production Practice 4.1: Train employees to operate the plant in a manner that minimizes

the potential for cyanide exposures and releases.

The operation is **☑** in full compliance with Production Practice 4.1

Summarize the basis for this Finding:

PCDC has formal training programs that include safety training for the handling of hazardous materials prior to the start of work and periodic refresher training on all procedures. The training program discusses chemical hazards and safety precautions. PCDC employees also received additional training and training materials from DuPont.

Personnel are trained on the use of personal protective equipment as part of the safety training and again during the on-the-job training.

Employees are trained to perform normal operation tasks to minimize risks to personal safety and the environment. Awareness of procedural requirements was evaluated through interviews. Employees showed very good awareness of procedural requirements for both normal and upset operating conditions.

All personnel are trained on all of the operating and safety procedures. Forklift drivers also receive specialized training in order to perform their jobs safely. Records were reviewed and were found to be complete.

Experienced and qualified personnel provide the safety and operations training. Interviews indicated that the cyanide-specific training at PCDC is given by DuPont and the general safety training is given by the SHEQ Manager.

Personnel are trained using the employee induction process. This calls for personnel to be fully trained prior to unloading, loading, or handling sodium cyanide packages. Employees are trained over a two-week period. The PCDC Employee Induction form was reviewed. This shows a very well organized curriculum for all new employees that includes training on sodium cyanide. The Training Index is used to define frequency. Sodium Cyanide training and spill response training is given annually.

On October 1, 2012 PCDC conducted an extensive emergency response drill in coordination with DuPont personnel. Employee exposure response procedures were tested. Records from the

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exercise were detailed and demonstrated that employee performance was evaluated to determine any additional training needs. The results of the drill were very successful.

<u>Production Practice 4.2</u>: Train employees to respond to cyanide exposures and releases.

The operation is **☐** in full compliance with Production Practice 4.2

Summarize the basis for this Finding:

PCDC trains personnel on emergency response procedures and on what to do if a cyanide release is discovered. This is done as part of the regular safety training and emergency response training on the emergency response plan that is specific to each warehouse. The testing is very comprehensive.

Emergency drills are conducted annually. Corrective actions are to be processed and emergency procedures are to be revised as necessary following drill critiques.

Training records are maintained for at least seven years. The basic training records are maintained for the length of employment and the recurring training is maintained for seven years.

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

<u>Production Practice 5.1</u>: Prepare detailed emergency response plans for potential cyanide releases.

The operation is \square in full compliance with Production Practice 5.1

Summarize the basis for this Finding:

The PCDC Spill Control procedure, dated February 28, 2012 is the primary procedure for cyanide emergencies. Additional procedures for addressing specific upset conditions or emergency situations are also maintained. The emergency response procedures address plausible scenarios and were found to be appropriate for the operation. The emergency response plan and detailed support procedures for managing emergency situations fulfill all ICMC Emergency Response Plan requirements.

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The emergency response procedures were reviewed with PCDC personnel. The warehouse is located in an industrial zoned area. Only sodium cyanide in the solid form is stored at this warehouse. Specific response actions such as risk evaluation and careful containment and remediation steps are detailed in the emergency plans. Part of the evaluation procedure is to identify the source of the spill, and control the release of material at the source. Evaluations are done following the deployment of the emergency procedures to determine what may have caused the spill. Information learned from the event is used to facilitate the implementation of corrective measures to prevent future releases.

Production Practice 5.2: *Involve site personnel and stakeholders in the planning process.*

The operation is **☑** in full compliance with Production Practice 5.2

Summarize the basis for this Finding:

PCDC holds regular safety meetings with employees to ensure that they are involved in the development of safety procedures and processes at the site. Emergency response and sodium cyanide awareness training was conducted. During this training employees had the opportunity to discuss plans and response actions that would be necessary in the event of an emergency.

Emergency planning is also done with the local Fire Department. The last visit was in March 2012. The Fire Department is a holder of a controlled copy of the site's Fire Safety Plan. The local Fire Department visited the facility in February 2012. They visited again on March 27, 2012 to review changes to the type of hazardous good stored at the facility. Additionally, an annual letter is sent to neighbors as part of PCDC's Responsible Care Community Awareness Emergency Response (CAER) program. The last letter was sent out in February 2012. Planning with the local hospital was done in June 2012 during the cyanide safety training.

Production Practice 5.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

The operation is **☑** in full compliance with Production Practice 5.3

Summarize the basis for this Finding:

Primary Emergency Response Teams are identified and alternate coordinators are identified in the emergency procedures for PCDC. The emergency response plan clearly designates full responsibility, authority, and duties for managing an emergency situation to coordinators and team members. Call-out procedures including 24-hour contact information for coordinators and

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response team members are included in the emergency planning documentation. Training for emergency responders was found to be appropriate. Awareness of roles and responsibilities was very good.

Lists of necessary emergency response equipment are contained within the emergency planning documentation. The equipment is regularly inspected. The processes for maintaining emergency equipment is also addressed in the PCDC emergency response plan. Emergency equipment is checked at least monthly. Records and interviews during the PCDC confirmed this practice.

The PCDC Dispatcher on duty is the Emergency Coordinator with defined roles. The roles of the Emergency Response Team are clearly identified in the Emergency Evacuation Plan. Emergency Coordinator, Traffic Coordinator, Runners, Pump House Coordinator, First Aid Coordinator, Media Coordinator. Vests and information cards are handed out by the Emergency Coordinator at the time of the emergency with the tasks that need to be performed. This process was observed during the audit as one of the alarms was activated. The process was deemed to be very effective at designating responsibilities and tasks. Once external responders arrive at the scene, the Emergency Coordinator takes the role of the interface point between team members and the authorities. The spill response contractor attends the scene for a large spill or one that has contacted water or acid. The last training on the emergency procedures was done in December 2011. This is an annual training. Spill Control training is also performed annually.

<u>Production Practice 5.4:</u> Develop procedures for internal and external emergency notification and reporting.

The operation is \square in full compliance with Production Practice 5.4

Summarize the basis for this Finding:

The Spill Control procedure outlines when notifications and reporting needs to be done, especially to outside authorities. Appendix 2 of the Emergency Response Plan is the Emergency Call List. This listed was last updated in July 2012. There is an annual review of phone numbers to ensure that numbers are up-to-date. The Incident Investigation, Classification and Reporting procedure details the steps to be taken and further reporting requirements.

Extensive notification information is also contained in the DuPont "Cyanides Global Response Plan for Off-Site Incidents." For on-site emergencies at PCDC, notifications are made to DuPont emergency responders and to personnel within DuPont. The DuPont emergency response plans were last updated in 2011. Additionally, DuPont maintains emergency planning documentation that details steps to be taken for any incident, including contact with the Media.

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<u>Production Practice 5.5</u>: Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The operation is ☐ in full compliance with Production Practice 5.5

Summarize the basis for this Finding:

PCDC's Sodium Cyanide procedure and the spill control procedures detail decontamination and disposal. Additional details regarding the remediation, neutralization, decontamination, and disposal of clean-up debris are contained within the DuPont Global Emergency Response Procedures. Extensive descriptions of necessary action steps depending on the incident scenario are clearly outlined in the procedures.

The PCDC and DuPont emergency response plans prohibit the use of treatment chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide if cyanide spills into surface waters.

No cyanide solution is handled at this location and it is highly improbable that a spill of solid sodium cyanide onto concrete would result in a release requiring environmental monitoring. .

<u>Production Practice 5.6</u>: Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is **☑** in full compliance with Production Practice 5.6

Summarize the basis for this Finding:

Both the PCDC and DuPont emergency procedures are reviewed at least annually to keep the plans up-to-date and confirm that the plans continue to be appropriate for the operation.

DuPont and PCDC perform internal emergency drills on an annual basis. Records were available to show that emergency drills were conducted for security breaches, evacuation, and cyanide exposure in 2012. Drills and records maintained from the drills were found to be comprehensive and of very high quality.

Full incident investigations are conducted by DuPont in the event that an actual emergency occurs. Revisions to the PCDC and DuPont emergency procedures are processed following drills and actual emergencies, as necessary.

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TONA Transport Certification Audit - Auditor's Finding

The TONA cyanide transportation practices were evaluated for ICMI Code compliance using the *ICMI Cyanide Transportation Verification Protocol* (2009). TONA internal Standards, Policies, Practices, and Procedures regarding the management of the operations were reviewed. Overall trucking operations including shipment tracking, chain of custody practices, dispatch practices, equipment maintenance, driver qualification and training, route risk assessment, and emergency planning activities were evaluated. The audit was conducted through discussions and interviews with multiple individuals in cross-functional roles at TONA. Records were randomly sampled for all ICMC requirements and were found to be acceptable.

The results of this certification audit indicate that the TONA Transport Operations based from the PCDC location are in FULL COMPLIANCE with International Cyanide Management Code requirements.

TONA Transport Certification Audit Results

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

<u>Transport Practice 1.1:</u> Select cyanide transport routes to minimize the potential for

accidents and releases.

The operation is: ☑ in full compliance with Transport Practice 1.1

Summarize the basis for this Finding:

TONA Transport maintains a procedure entitled "Transportation of Sodium Cyanide." This procedure details all policies and procedures that were added to the standard operating procedures when the organization started transporting cyanide in 2011. Part of the procedure addresses ICMI requirements regarding route selection, route risk assessment, route approval, and driver feedback.

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The TONA Transportation Manager reviews and approves all transportation routes used for cyanide shipments. The Transportation Manager reviews the cyanide routes at least annually and maintains the approved routing documentation for each cyanide transportation route. According to interviews and a review of records, all cyanide delivery routes are evaluated to determine if comparable routes would be available that would reduce the risks associated with proximity to high population densities, poor road infrastructure (sharp turns), pitch & grade, proximity to water bodies, and prevalence and likelihood of poor weather and resulting poor driving conditions. Routing considerations were found to be consistent with those required by the Code.

Records were available to show that the TONA Transportation Manager evaluated risks associated with routes when they are initially established. Specific routes, risks, and risk mitigation measures are detailed in the records.

Driver feedback is obtained after each delivery, as appropriate through the dispatch operation. This is detailed in the "Transportation of Sodium Cyanide" procedure. According to interviews, driver feedback is also formally sought out and incorporated into the process when the routes are re-evaluated on an annual basis.

Risk mitigation measures to be taken on a specific route are documented in the Route Risk Assessment records. Drivers were trained on the route risk assessment information and signed to demonstrate that they understood the information. The consideration of stakeholder concerns such as the use of only government-designated hazmat routes ensures adherence to local requirements regarding hazardous materials.

DuPont communicates emergency response information to external responders who would respond in the event of an emergency. Records were available to demonstrate that DuPont had trained personnel at the local hospital and that DuPont also trained its Canadian response contractor Newalta in 2012, as per the DuPont Emergency Response Assistance Plan (ERAP) that is required by Canadian regulations.

TONA does not use subcontractors for any portion of its cyanide transportation operations.

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 operation is: **☑** in full compliance with Transport Practice 1.2

Summarize the basis for this Finding:

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TONA uses only trained, qualified and licensed drivers. Drivers have a minimum of three years experience and each have a Commercial Driver's License with hazardous material transportation cards from either Canada or the U.S. Record reviews and interviews were used to confirm that all personnel operating cyanide transport equipment are qualified and have been trained sufficiently to enable them to perform their jobs safely and appropriately.

Training records were well organized and were available for all drivers who are authorized for transporting cyanide. Training records showed that drivers had been trained on the hazards of cyanide and emergency notification procedures. All drivers who transport cyanide receive annual cyanide safety training. Training records for 2011 and 2012 were reviewed. The TONA Driver Trainer tracks the expiration dates of the driving credentials and training. The training materials were found to be very thorough. Testing is done after training to ensure competency and understanding.

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

The operation is: ☑ in full compliance with Transport Practice 1.3

Summarize the basis for this Finding:

TONA transports cyanide intermodal containers using heavy-duty commercial tractors pulling triple-axle chasses. They are capable of handling loads that are significantly heavier than the 20-foot intermodal containers that are used in this supply chain. Equipment, including tractors, chasses, communications equipment, tires, and intermodal containers were evaluated during the audit. Vendors that supply the tractor and chassis equipment were also audited during this evaluation. Preventive maintenance programs at both vendors were found to be very well organized and they demonstrated strong processes that are used to maintain equipment in proper and safe working condition.

The weights are standard weights indicated on the Bill of Lading. The equipment is capable of handling loads far in excess of the amounts of cyanide that can be packed into a 20-foot intermodal container. This was confirmed through a review of records and specification information for the equipment.

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Develop and implement a safety program for transport of cyanide. *Transport Practice 1.4:*

☑ in full compliance with Transport Practice 1.4 The operation is:

Summarize the basis for this Finding:

Cyanide packages are loaded using documented blocking and bracing methods into intermodal containers by PCDC personnel. TONA drivers confirm that the load has been properly secured after the cargo has been loaded. Appropriate placards are displayed on all four sides of the trailers. Records were reviewed and drivers were found to be excellent at properly maintaining records to show pre-trip and post-trip inspections and the results of these inspections. Records were also readily available to show that when equipment deficiencies were noted, that these deficiencies were promptly resolved.

All equipment, including tractors, trailers, and tires were in excellent condition. Vendors that maintain the tractors and trailers were audited and were found to have excellent preventive maintenance processes in place. Comprehensive records were readily available to demonstrate that all preventive maintenance activities were being conducted per plan.

Drivers abide by the Canadian laws with regard to limitations on the number of hours driven. Logs demonstrated that drivers are not exceeding limitations.

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

The operation is: **☑** in full compliance with Transport Practice 1.5

Summarize the basis for this Finding:

TONA does not ship cyanide by sea or by air. This section of the ICMC does not apply to the operation

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

☑ in full compliance with Transport Practice 1.6 The operation is:

Summarize the basis for this Finding:

TONA uses several GPS and communication systems to ensure that drivers are always able to communicate with dispatch personnel and others, as necessary. According to interviews, the communication system functionality is confirmed during the pre-trip inspection process. Records were also available to demonstrate that communications equipment is confirmed to be in good working condition during monthly functional tests.

GPS tracking pings the tractors every 15 minutes, enabling close tracking of shipments. Dispatch personnel demonstrated their ability to access real-time information if there were any question as to the location of a truck. The system software is tested remotely on a weekly basis to ensure that it is properly functioning. Blackout areas do not present a significant problem on the routes traveled.

Drivers have shipping documentation including the Bill of Lading with them at all times during a shipment. Information regarding the type of material transported, the type of container, the number of packages, and the weight of the shipment is consistently entered onto the Bill of Lading by the shipper. Drivers carry Emergency Response Guides with them during deliveries. This practice was confirmed through interview.

Shipping paperwork was found to be conformant to Code requirements, including chain of custody requirements.

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

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

The operation is: **☑** in full compliance with Transport Practice 2.1

Summarize the basis for this Finding:

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TONA does not have any cyanide interim storage responsibilities. The PCDC is the storage facility for this supply chain. During the audit of the warehouse, confirmation was made that all ICMI interim storage requirements are fulfilled. Cyanide packages have appropriate warnings, PPE requirements are defined, and smoking, eating, and drinking are not allowed in the storage areas. The facility is fenced and doors are locked to prevent unauthorized access. Cyanide is separated from other materials in the storage area as well as in the loading / unloading areas to ensure that incompatible materials are never in the same location. The facility is under roof and loading and unloading activities are conducted under roof to minimize the potential for the material to become wet. Confirmation was made that ventilation in the facility is adequate for the storage of cyanide. The only material stored at the facility is solid cyanide briquettes in multiple layers of packaging within sealed intermodal containers. The requirement for additional spill barriers was not deemed to be applicable to this operation.

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

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

The operation is: **☑** in full compliance with Transport Practice 3.1

Summarize the basis for this Finding:

TONA maintains Vehicle Accident Procedures for accidents with and without spilled materials. The emergency procedures are very thorough and are maintained as part of the Driver's Manual. This Manual is required to be in the trucks during transport. The plans were found to be appropriate for the routes driven. The emergency response plans describe what steps are to be taken in response to traffic accidents. The procedures include cyanide-specific response actions and general cyanide safety information.

DuPont maintains an Emergency Reasponse Action Plan (ERAP) for all transportation modes in Canada, as required by regulations. These emergency plans were reviewed during the audit and were found to be appropriate for the supply chain. The ERAP was approved on June 22, 2011. Emergency Response Contractors are trained by DuPont every three years, as described in the ERAP. The last training was conducted in 2012. The plan was updated on February 14, 2012.

TONA only transports cyanide via truck and all scenarios considered in the emergency planning documents were related to truck accidents or small cyanide spills from packaging. Solid sodium cyanide (the only physical form transported), roadway infrastructure differences, and the roles of the different emergency responders are discussed in the planning information.

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Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.

The operation is: **☑** in full compliance with Transport Practice 3.2

Summarize the basis for this Finding:

Emergency response training and cyanide-specific safety and emergency response training is given to employees on an annual basis. The emergency training consists of a DVD, the Driver's Manual, and Cyanide Safety training. The DVD training is made by Danatec.

At the time of dispatch the driver is issued an emergency equipment bag and Sodium Cyanide Driver PPE Checklist. Records were available to show that the drivers are checking equipment availability and kit completeness before each trip. The bag contains: goggles, chemical suit, rubber boots, gloves, tarp, and containment pool. The bags are sealed to ensure that the contents have not been disrupted. If the seal is broken the Quebec Fleet Supervisor/Driver Trainer is notified by the driver and the bag is re-stocked.

The responsibilities of the driver are clearly defined. The driver is to secure the scene, assist emergency responders with information about the product, and make all necessary telephone notifications.

Transport Practice 3.3: Develop procedures for internal and external emergency notification and reporting.

☑ in full compliance with Transport Practice 3.3 The operation is:

Summarize the basis for this Finding:

Emergency numbers are listed in the Driver's Manual with a central toll free number.

The DuPont ERAP is reviewed on an annual basis for accuracy and is updated within 24 hours after a change is identified.

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

The operation is: **☑** in full compliance with Transport Practice 3.4

Summarize the basis for this Finding:

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TONA and DuPont procedures list specific details regarding the remediation, neutralization, decontamination, and disposal of clean-up debris. Extensive descriptions of necessary action steps depending on the incident scenario are clearly outlined in the document. Detailed procedures on decontamination are also included. The Cyanide Emergency Response Guidelines were last updated in July 2012. Procedures prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

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

☑ in full compliance with Transport Practice 3.5 The operation is:

Summarize the basis for this Finding:

The emergency procedures are reviewed by TONA at least annually to ensure adequacy. Changes are implemented as required. Emergency response drills are conducted annually. One drill was held subsequent to this audit in October 2012. The drill was very thorough and included individual performance reviews of the drivers. All drivers were involved in the hands-on drill and post-drill review.

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