SUMMARY AUDIT REPORT FOR CYANIDE PRODUCTION OPERATIONS

Instructions

- 1. The basis for the finding and/or statement of deficiencies for each Production Practice should be summarized in this Summary Audit Report for Cyanide Production Operations. This should be done in a few sentences or a paragraph.
- 2. The name of the cyanide production operation, lead auditor signature and date of the audit must be inserted on the bottom of each page of this Summary Audit Report.
- 3. An operation undergoing a Code Verification Audit that is in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.
- 4. The Summary Audit Report and Corrective Action Plan, if appropriate, for a cyanide production operation undergoing a Code Verification Audit with all required signatures must be submitted in hard copy to:

International Cyanide Management Institute (ICMI) 888 16th Street, NW, Suite 303 Washington, DC 20006, USA

- 5. The submittal must be accompanied with 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report and Corrective Action Plan, if necessary, on the Code Website, and 2) a completed Auditor Credentials Form. The lead auditor's signature on the Auditor Credentials Form must be certified by notarization or equivalent.
- 6. Action will not be taken on certification based on the Summary Audit Report until the application form for a Code signatory and the required fees are received by ICMI from the applicable cyanide production company.
- 7. The description of the operations should include sufficient information to describe the scope and complexity of the cyanide production operation.

ame of Cyanide Production Facility: Cyanco Sodium Cyanide Transloading
erminal
ame of Facility Owner: Cyanco
ame of Facility Operator: Mario Drapeau
ame of Responsible Managers: Roy Norcross
ddress: 33 Dumont Street, East
tate/Province: Quebec Country: Canada
elephone: 203-426-8333 Fax: 203-426-8387 E-Mail:
v.norcross@cvanco.com

Location detail and description of operation:

Additional contact person: Bill Clark, ESHQ Compliance Manager

Phone: 001-215-321-7226 Fax: 001-215-321-3944 bill.clark@cyanco.com

Description of operation:

The purpose of the Cadillac Terminal operation is to receive solid NaCN briquettes, to dissolve these briquettes with warm water, store the 30% NaCN solution and deliver this solution to the Cyanco customers via tanker trucks. The solid cyanide will be sent from the supplier's production facility in the USA by hopper railcars. They are parked inside the fenced Terminal area and unloaded inside the Terminal building. All three storage tanks, pipes and pumps are located in concrete dikes designed to contain the NaCN solution in case of a spill. The railcar and the tanker truck area are also in a dike as well. The tractors dedicated for hauling the tanks with cyanide solution to the Canadian customers are equipped with a state of the art Satellite Tracking System with an on board communication keyboard. Under regular conditions, two or respectively three people are working at the Terminal.

It is important to know that the Cadillac Transloading Terminal is self-contained and all operations are carried out inside the building.

Compared to the situation during the initial Code certification audit three years ago the operational processes and the technical equipment are the same. Some measures for improvement had been implemented, for example a new coating of the concrete in the process area. A new dissolving concept for the solid cyanide had been created. Through this modification the occupational safety had been improved when the hopper car is disconnected after all the cyanide was dissolved. The risk for exposure to concentrated cyanide solution is reduced and less cyanide residue will remain in the hopper cars and hoses.

Cyanco Terminal, Cadillac/Canada
Name of Facility

Signature of Lead Auditor

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The	internal	organiza	ation	of the	termi	nal	and	the	pers	onnel	situ	ıation	is	still	the	same	as	three
years	before.	It is an	outst	tanding	EHS	rec	cord	that	the	Cadil	lac	Termi	nal	has	zer	o acc	ider	nts ir
more	than 14	years.																

Cyanco Terminal, Cadillac/Canada

Name of Facility

Signature of Lead Auditor

U. Mr. Michm

Auditor's Finding

This operation is		
x in full compliance ☐ in substantial compliance ☐ not in compliance	ce *(see below)	
with the International Cyanide M	Ianagement Code.	
<u> </u>	tion in substantial compliance ammary Audit Report. The pla	into full compliance
Audit Company: DQS GmbH; A Audit Team Leader: Dr. Klinken Names and Signatures of Other A	, Heinz Theo E-mail: okt.kl	inken@t-online.de_
Date(s) of Audit: January 24 th +		umentation
assessment) I attest that I meet the criteria for		et of interest for Code
Verification Audit Team Leader, esta and that all members of the audi International Cyanide Management In	blished by the International Cyanide t team meet the applicable criter	e Management Institute ria established by the
I attest that this Summary Audit Reaudit. I further attest that the verificaccordance with the International Cyal Production Operations and using senvironmental audits.	cation audit was conducted in a panide Management Code Verification	professional manner in n Protocol for Cyanide
	U. Hr. Michm	
CyPlus Terminal, Cadillac/Canada Name of Facility	Signature of Lead Auditor	Mar 12 th , 2010_ Date
Cyanco Terminal, Cadillac/Canada Name of Facility	Signature of Lead Auditor	Mar 12 th , 2010_ Date

Design, construct and operate cyanide production facilities to prevent

rel	ease of cyanide.	
<u>Production Practice1.1</u> :	Design and construct cyanide produsound, accepted engineering practic assurance procedures.	· ·
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Production Practice 1.1
The complete Transloadin according to Canadian Quality Assurance and Statements of the authorized the production process	nis Finding/Deficiencies Identified: ng Terminal at Cadillac site including regulations. The construction and the uality Control are on a high level and plementation and realization of the fa- during this phase had been supervised feed materials and the installed equipm by QA/QC procedures and were carr re available, documented and retained in corities are in place. The "Training and and all installed equipment on the interlocks to shut down production ar	e corresponding programs for meet the Code's criteria. Each acility had been regulated and d by competent engineers and ent as well as the constructing ried out by qualified personnel. In specific files. Final approvals d Operation Manual" describes production facility. It defines

<u>Production Practice 1.2:</u>	Develop and implement plans and production facilities in a manner the	1 1
The operation is	x in full compliance with ☐ in substantial compliance with	Production Practice 1.2
	\square not in compliance with	

equipment to control the production process is installed and under control. The whole cyanide transloading process is controlled, supervised and checked by an automatic control system. The Terminal is a self-contained facility where all activities are done under a roof and on a concrete floor with additional membrane. Sufficient capacity of secondary containment is available, spill

Summarize the basis for this Finding/Deficiencies Identified:

prevention and containment measures for all pipelines are provided.

The Training and Operation Manual describes the production process and all installed equipment of the facility. It defines automatic systems and interlocks to shut down production systems and prevent releases. As well, technical safety equipment is installed and under control. The whole cyanide transloading process is controlled, supervised and checked by automatic systems. All storing equipment for solid and liquid cyanide is supervised and under control and under regular maintenance.

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Name of Facility

1. OPERATIONS:

Signature of Lead Auditor

U. il. Shilm

Cyanide detectors are in place. Exposure of solid cyanide to moisture is avoided by hermetic systems. A corresponding Emergency and Response Plan provides organization, systems and facilities to respond to and prevent unplanned releases of cyanide. An integrated management system for quality and environment acc. to ISO 9001 and ISO 14001 had been certified. All relevant procedures are described.

<u>Production Practice 1.3</u> :	Inspect cyanide production facilities to ensure their integrity of prevent accidental releases.	and
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified: Cyanco provides a list representing the installation register in accordance to legislation. It covers annual routine inspections of tanks, pipelines, containments and other equipment by authorized experts and independent certified bodies. The corresponding inspection protocols state compliance with the Code's requirements. Additional routine inspections by employees (permanently) and preventive controls are considered and are part of the maintenance program. The results of those routine inspections are documented in the shift manual or in data files, respectively. Corrective actions coming out of inspections are initiated and documented in equipment manuals.

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.

x in full compliance with

The operation is ☐ in substantial compliance with Production Practice 2.1

 \square not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

In accordance to Canadian law and internal requirements the Cyanco organization is enforced to perform a danger and risk analysis in which all relevant aspects are considered. By fulfilling these requirements it is ensured that the Code requirements are met. For example, the working places have been analyzed in cooperation with medical experts, doctors and safety engineers. The analysis is reviewed periodically. Preventive measures are arranged, if necessary. Within the integrated management system for quality, environment and safety Cyanco has implemented many documents to operate the facility in a sound and safe manner. Specific instructions to minimize worker exposure are developed such as general safety instructions, instructions concerning the handling of hazardous material or emergency operations. Change management is mentioned in different procedures and in the management handbook.

U. Mr. Llinha

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Hydrogen cyanide monitoring equipment is maintained, tested and calibrated. Warning signs are installed throughout the facility; smoking, eating and drinking is prohibited. The employees demonstrated high awareness to the auditor.

<u>Production Practice 2.2:</u>	Develop and implement plans and procedures for rapid and effective response to cyanide exposure.					
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Production Practice 2.2				

Summarize the basis for this Finding/Deficiencies Identified:

The facility has developed and implemented an operational alarm and emergency response plan in accordance to Canadian law and internal Cyanco requirements. This includes the specific conditions and measures in the Transloading Terminal. All relevant aspects such as behaviour in case of emergency are taken into account. First aid and emergency response equipment (showers, eye-wash stations, fire-extinguishers, Cyano kit, MSDS and so on) are available and under control. A medical support plan with all required instruments and equipment has been implemented. In fact, the Cadillac Terminal is located in the middle of a mining area; this means that the affected institutions for support possess the necessary equipment and are well experienced. The fact that local medical facilities have the necessary skills and resources to treat cyanide exposure was verified by documents and digital photos made during simulation of emergency cases. The labeling of tanks, pipelines reactors and other items is in place. Mock emergency drills are conducted.

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

<u>Production Practice 3.1</u> :	Conduct environmental monitori unplanned releases of cyanide do n	v 1
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Production Practice 3.1

Summarize the basis for this Finding/Deficiencies Identified:

To fulfill legal and other requirements, specific environmental monitoring concerning emissions, wastewater handling, waste disposal or hazardous materials are realized. The results show that environmental impacts are under control. For example, the Cyanco facility has no direct discharge to surface water. The facility has a self-contained system with concrete floor and an additional membrane underneath. There is no beneficial use of ground water and no numerical ground water standards are applied to Cadillac at a specified point of compliance.

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U. M. Alinha

A scrubber is in place to wash the volatile emissions so that, in fact, no emissions will pass. As well, no air permit is required. Different monitoring devices for controlling the environmental impact are in place; they were checked in a regular manner.

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.
 x in full compliance with
 □ in substantial compliance with
 □ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Based on their professional education, the operating employees are qualified as skilled workers which went through professional training. In addition, a training program is elaborated for each employee. This program provides several lessons concerning the general operation of the facility or the use of personal protective equipment as well as specific training concerning individual tasks. The training is provided by qualified experts and superiors. The training effectiveness is evaluated by testing, examination or observation. The training elements are documented and the records are retained according to internal requirements for several years.

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

 \mathbf{x} in full compliance with

The operation is \Box in substantial compliance with Production Practice 4.2

□ not in compliance with

□ not subject to

Summarize the basis for this Finding/Deficiencies Identified:

The above mentioned education is the basis for the training concept which is specified to the requirements of the certain function of each employee. Training for special tasks such as first aid responder are considered. These training lessons are performed by internal and external experts or institutes. They are provided to qualify specific functions of the operation personnel and to improve their behaviour in cases of emergency such as cyanide exposure. Periodical drills are performed to optimize the response in cases of emergency; the response training is reported and evaluated, training records are retained.

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Signature of Lead Auditor

5.	EMERGENCY RESPONSE:	Protect comn	nunii	ties and	the	environme	nt through	the
		development	of	emergen	ıcy	response	strategies	and
		capabilities.						

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

releases.

x in full compliance with

The operation is ☐ in substantial compliance with Production Practice 5.1

□ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

All relevant and potential failure scenarios are regulated through different plans such as: a) Emergency Response Plan, ERP and b) Emergency Response Assistance Plan, ERAP or c) DETER manual (Evonik <u>Degussa Team Emergency Response</u>), ERP Ecology Control Industries (ECI) or NEWALTA, which are contracted external service companies to give support in cases of emergency. In the relevant emergency situations further external responders such as firebrigades or the medical institutions are notified. The potential failure scenarios such as catastrophic release of hydrogen cyanide, releases during loading and dissolution, during fire or equipment ruptures are considered. The plans describe specific response actions such as evacuation, notification of the neighbourhood or affected persons and communication with all relevant institutions, use of antidotes and first aid measures, handling of hazardous material or control of releases. Containment, assessment, mitigation and actions to prevent future releases are considered.

<u>Production Practice 5.2:</u> Involve site personnel and stakeholders in the planning process.

x in full compliance with

The operation is ☐ in substantial compliance with Production Practice 5.2

 \square not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Tasks and responsibilities in cases of emergency are regulated by the different response plans. The certain functions such as security personnel, medical department, fire-brigade, contracted responders or the involvement of the top management are taken into account. Beside this, potentially affected communities such as local government and environmental authorities, the mayor, fire-brigades, police or hospitals are involved and well informed about the nature of the risks of the cyanide production facility. The ways of communication in general and in cases of emergency are regulated. The acting persons know each other. Documents concerning the behaviour in cases of emergency are in place at the different communities.

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<u>Production Practice 5.3:</u>	Designate appropriate personnel and resources for emergency response	and commit necessary equipment onse.
	x in full compliance with	
The operation is	☐ in substantial compliance with ☐ not in compliance with	Production Practice 5.3
The Emergency Response in cases of emergency sue the top management or defined, too. As mentio support within a permanawith focal points of risks, integrated into the plans.	his Finding/Deficiencies Identified: Plans determine the different function as the responsibilities of the chiese the communication manager. The med above, the Cadillac Terminal ent 24 hour standby service. Gener registers or lists of response equipmed Mock drills are performed periodical as NEWALTA are involved in extensed documented.	of emergency response coordinator, Emergency Response Teams are provides contracted professional ral alarming procedures, site maps ment and inspection procedures are rally together with production staff.
Production Practice 5.4:	Develop procedures for internal a and reporting.	nd external emergency notification
	x in full compliance with	
The operation is	☐ in substantial compliance with ☐ not in compliance with	Production Practice 5.4
Summarize the basis for th	his Finding/Deficiencies Identified:	

The relevant procedures are described in the above mentioned alarm and emergency response plans. They contain relevant procedures for internal and external emergency notification and reporting. The relevant contacts such as authorities, police, nearby companies, public institutions, hospitals or public media are involved. Contracted responders are considered. All emergency cases run through NEWALTA or DETER (Evonik Degussa Team Emergency Response) that is responsible for internal communication to the different levels of the management of the Cyanco organization.

U. Mr. Llinha

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<u>Production Practice 5.5</u> :	Incorporate into response p monitoring elements that account cyanide treatment chemicals.			
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Produc	tion Practice 5.5	5

Summarize the basis for this Finding/Deficiencies Identified:

All the emergency response activities run through the activation of an external organization for support as contracted via term sheet. There is a specialist in responding against cyanide accidents and incidents. Due to their skill and in order to fulfil their requirements they will realize appropriate remediation measures if necessary and as described in the regarding documentation (e.g. ERAP). Technical and personnel response capabilities are regulated in the ERAP. If necessary, specific activities will be realized in relation to the environmental impacts. Remediation measures are integrated in this concept. Detoxification by chemical treatment is prohibited.

<u>Production Practice 5.6</u> :	Periodically evaluate response procedures and capabilities and revise them as needed.	
The operation is	x in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Production Practice 5.6

Summarize the basis for this Finding/Deficiencies Identified:

As stated before, the response procedures are trained periodically. Mock drills are performed, e.g. drill in July 2009. The results and reports of these drills are the basis to review the procedures. In addition, the different alarm and emergency response plans are revised once per year by the competent manager or EHS responsible, respectively. It depends on specific cases such as emergencies or technical changes. This is in accordance to the management of change procedure. A periodic review of the ERP is determined in chapter 2 of this document.

U. Hr. Llinkm