

***INTERNATIONAL CYANIDE
MANAGEMENT INSTITUTE***

**Cyanide Transportation
Summary Audit Report**

For

Haukes N.V.

To The

International Cyanide Management Code

October 2009 Verification Protocol

By

Environmental Technology & Management

SUMMARY AUDIT REPORT

Name of Cyanide Transportation Facility: **Haukes N.V.**
Name of Facility Owner: **Haukes N.V.**
Name of Facility Operator: **Haukes N.V.**
Name of Responsible Manager: **Jeroen Haukes, Chief Operating Officer**
Address: **Martin Luther Kingweg 701**
City: **Wanica** State/Province: **District Wanica** Country: **Suriname**
Telephone: **6802279** Fax: **531986** E-Mail: jhaukes@haukesnv.com

Location detail and description of operations:

On November 14-17, 2016 Environmental Technology & Management conducted an audit of Haukes N.V.'s cyanide transportation activities against the Transport Practices of the International Cyanide Management Code. Since 2007, Haukes N.V. has been transporting sodium cyanide from the port of Paramaribo to the Iamgold Mine in South Central Suriname. In 2016, a shipper began to use Haukes N.V. as a transporter of sodium cyanide briquettes from the Surinamese Port of Moengo to the Newmont Suriname Mine at Merian. These are the last transportation segments in the shipper's Global Ocean Supply Chain to Suriname.


Haukes, N.V., founded in 1991, provides construction and transportation services throughout Suriname. All of its tractors are satellite equipped to provide real time tracking of shipments from pick up at the port to delivery at the mine. Haukes N.V.'s cyanide transportation activities are based at its Wanica Facility, hereafter referred to as "Highway", and include transporting sodium cyanide (NaCN) briquettes in Sea Containers and ISO Tanks from the Ports of Moengo and Paramaribo to gold mines in the Eastern and South Central areas of the country.

Haukes N.V. has selected and evaluated a primary route to each consignee. Details of the evaluation process are provided in this report. Because of the presently served mines' remote locations, with little exception, there is only one route. The route to the Newmont Suriname Merian mine is two-lane dirt, while the road to the Iamgold Rosebel Mine is mostly asphalt. During this audit, Haukes assembled a convoy from Moengo to the Merian Mine to demonstrate to this auditor measures taken for transportation safety and security. Because the auditor experienced this route in its entirety, much of the documentation and commentary will be on that route. However, the auditor confirmed that Haukes N.V. applies the same risk assessment and transportation procedures for all routes of cyanide transport.

Haukes N.V. has a very competent Environmental, Health and Safety Department, which along with its Learning and Development Center and Newmont Suriname Mine staff have provided cyanide handling and emergency preparedness and response training to Haukes N.V. drivers on all cyanide routes. Because of Haukes N.V.'s strong product stewardship and social responsibility ethic, it has taken the lead on advising and training external responders, medical facilities and communities along the selected routes.

This report provides the detailed findings regarding Haukes N.V.'s conformance to the requirements of the Cyanide Transportation Verification Protocol. Findings are based on interviews, observations and


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review of management documents developed over Haukes N.V.'s years of cyanide transportation service in Suriname

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Auditor's Finding

This operation is

- in full compliance
- in substantial compliance with the International Cyanide Management Code.
- not in compliance

Audit Company: **Environmental Technology & Management**

Audit Team Leader: **John B. (Jack) McVaugh, PE, RCMS/EMS-LA**

E-mail: **jbkem.etm@att.net**

Names and Signatures of Other Auditors: **NA**

Date(s) of Audit: **November 14-17, 2016**

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

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

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Signature of Lead Auditor

January 31, 2017
Date

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SUMMARY AUDIT REPORT

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.*

The operation is in full compliance with
 in substantial compliance with Transport Practice 1.1
 not in compliance with


Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 1.1. Haukes N.V. has developed and maintains a Risk Assessment Procedure and Risk Registers to manage risks of cyanide transportation. Because of the remote locations of mines presently served by Haukes NV, there are no alternative routes to be assessed. However, the procedure considers risk associated with population density, infrastructure, road construction and condition, pitch and grade, proximity of water bodies and prevalence of fog and other visibility issues. Results of the assessment for each route are recorded on a Risk Register, which is subject to frequent review and revision as necessary.

In consideration of the local population’s safety, procedures state that convoys do not leave a port until after 8 AM, to avoid the presence of children walking to school. In Paramaribo, vehicles leaving a port with Hazardous materials must wait until after 9AM. Convoys transporting sodium cyanide report road conditions, and if necessary, Haukes N.V., being also in the construction business, can dispatch road repair equipment to address reported issues. This includes repairs to bridges and culverts. Pitch and grade are considered as well. Haukes N.V. regraded the Newmont Suriname route to alleviate a steep incline and curve situation. The Risk Registers and maps indicate that the routes cross no major bodies of water, only a few small creeks. Haukes NV maintains bridges and culverts along the route, and has built guardrails on these structures, as well as alongside speed bumps to prevent accidents which could result in product spills into water. Anytime fog is encountered, the lead vehicle will warn the rest of the convoy. The convoy will pull off the road and stop if conditions warrant, as determined by the lead vehicle. A much more significant visibility issue lies with dust from the Newmont Suriname route’s unpaved road during dry weather, which Haukes N.V. addresses through use of convoys.

Haukes N.V. has developed and maintains a Risk Assessment Procedure and Risk Register to manage risks along each entire route. Identified hazards along each route are summarized on the Risk Registers. Haukes N.V. has developed SOP’s: Transportation of Containers with Cyanide for Newmont Suriname (or Iamgold) to document measures taken to address risks identified in the Risk Register for that route. Input from convoys and other employees could result in amendments to the risk registers and road repairs or changes to convoy stopping points along the route.

Haukes N.V.’s has met with every District Commissioner through which transportation routes pass. Furthermore, Haukes N.V. has received input from the National Institute for Environmental Development. Hazardous Material Training has involved port stevedoring crews and other employees,

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Fire Departments, medical clinics and police departments, during which time opportunity was presented to comment on the transportation plans. Because of the nature of the routes, e.g. Moengo Port to Newmont Suriname Mine is 90 km of dusty, unpaved road, with no emergency services between the port and the mine, Haukes N.V. always transports sodium cyanide in a convoy. The only external emergency responders and medical facilities serving the routes are located at the ports cities and the mines. Haukes N.V. conducts Hazmat training for drivers, as well as medical personnel and police from Paramaribo and Moengo. Haukes N.V. maintains its own well trained team and equipment to respond to chemical release emergencies.

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
 in substantial compliance with Transport Practice 1.2
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 1.2. Haukes N.V. uses only licensed, trained and qualified drivers to operate its vehicles. All Haukes N.V. drivers maintain a valid Truck Drivers' License (for trucks greater than 3,500 kg capacity) and have violated no law. All drivers are subject to Haukes N.V.'s Drug and Alcohol Program and background investigations, including the Good Behavior Statement. Mandatory Cyanide Awareness Training is presently conducted by Newmont Suriname for all Haukes N.V. cyanide drivers, no matter to which consignee they are transporting. All drivers receive training during their initial orientation, and refresher and on-going training provided by the Learning and Development Group at the Haukes N.V. Training Center. The auditor verified training course content by reviewing Newmont Cyanide Awareness Power Point slides, a Cyanco Cyanide Safety Training Video for Drivers and other course materials including an exam to demonstrate competency.


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

The operation is in full compliance with
 in substantial compliance with Transport Practice 1.3
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 1.3. Haukes NV. uses "Heavy Off-Road" tractors, with a specification process and maintenance program that ensures that all transport equipment

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retains a load-bearing capacity adequate for the anticipated load. Maintenance includes monthly inspections and Preventative Maintenance checks based on kilometers travelled as well as appropriate specifications for replacement equipment and parts. Trailers are inspected twice per month, especially when they have just completed a cyanide run and follow a heavy equipment PM schedule calculated based on kilometers travelled. The preventive maintenance schedule requires greater frequency than factory recommendations because of the harsher conditions of the routes travelled and the tropical environment. Inspection schedule compliance is maintained through frequent communication between Maintenance and Operations. The transporter's policy is not to dispatch tractors significantly beyond their maintenance due dates. Drivers must complete a Pre-Trip and a Post-Trip inspection (required by company policy rather than government mandate), and all issues identified during these inspections are communicated to the Maintenance Foremen by the Transportation Foremen. The shipper performs all cyanide loading according to its own procedures. Product weights are specified on shipping papers, and the shipper uses its own scales to weigh empty and loaded ISO Tanks and Sea Containers. Haukes N.V. transportation foremen check the weights and verify conformance with government axle-weight requirements.


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

The operation is in full compliance with
 in substantial compliance with Transport Practice 1.4
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 1.4. The shipper has procedures in place to ensure packaging integrity during transport of Sea Containers, including blocking and bracing techniques. Haukes N.V. drivers inspect the exteriors of ISO tanks and Sea Containers for any sign of damage or leaking product before leaving the ports. Transportation procedures then minimize the potential for damage to packaging due to load shifting. Mine personnel perform all container unloading tasks. Placards are installed by the shipper's personnel and are checked by Haukes N.V. drivers. Sea Containers and ISO Tanks are marked on all four sides with proper DOT placards and other signage. Haukes N.V. personnel store extra placards at the ports in case the originals have become dislodged or unreadable. Haukes N.V. maintains a Cyanide transportation safety and security program which includes drivers completing a Pre-Start inspection of each load for any evidence of powder, unsealed valves, hatches and locks; a systematic preventive maintenance program (See Transport Practice 1.3); Hours of Service limitations on driver schedules; procedures to prevent loads from shifting; conditions under which cyanide transportation may be modified or suspended; a drug and alcohol abuse prevention program and records management related to all activities in the plan. All records reviewed by this auditor were found to be complete, and were managed such that they were protected against damage, deterioration and loss, and were readily retrievable.

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

The operation is in full compliance with
 in substantial compliance with Transport Practice 1.5
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Since Haukes N.V. does not transport cyanide by sea and air, Haukes N.V. is in full compliance with Transport Practice 1.5.


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

The operation is in full compliance with
 in substantial compliance with Transport Practice 1.6
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 1.6. Haukes N.V.'s cyanide transport vehicles have at least two means of communication. Each tractor is equipped with satellite (GPS) for positioning and a radio for communication between convoy vehicles and with base camps, the mines and Headquarters. The Convoy Leader also carries a satellite telephone. Haukes N.V. uses GPS and radio for communications on a daily basis. Convoy vehicle drivers test their radios before leaving the ports and keep them in nearly constant use during the trip to the mines. If any equipment malfunctions, Operations notifies Information Technology, who immediately arranges for a repair. Each convoy carries a spare radio, which can be used in the interim. The Convoy Leader tests the satellite telephone during each scheduled rest stop. Blackout areas for radio communications have been identified for each route. Haukes N.V. has a contingency plan if radio communication is necessary in the blackout area. The Convoy Leader possesses a satellite phone which can be used to communicate convoy position and emergency situations to the Moengo Base Camp, which in turn communicates with the Mine and the Highway (Headquarters) facility. As stated above, the satellite phone is tested during each scheduled rest stop. The auditor verified that a GPS system tracks shipments in real time, as well as location, direction, speed and position history of transport vehicles. Haukes N.V. picks up Sea Containers and ISO Tanks, fully loaded and sealed, at the port locations and delivers them to the mines directly. Seal Numbers are recorded on shipping papers and drivers verify that the seals are intact and match those listed on the shipping papers, at the load pick-up point. The Shipping Document or Manifest serves as a chain of custody document. The Shipper indicates the amount of cyanide in transit on the Straight Bill of Lading, and that the shipping papers include a Safety Data Sheet. The Convoy Leader carries this documentation to the mine.

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

Transport Practice 2.1:


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

The operation is in full compliance with
 in substantial compliance with Transport Practice 2.1
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Because Haukes N.V. does not operate any cyanide trans-shipping depots or interim storage sites, Haukes N.V. is in full compliance with Transport Practice 2.1. During a visit to the Port of Moengo, the auditor verified that cyanide stored in ISO and Sea Containers, under the control of the Newmont Suriname Mine, from the time it is off-loaded from ships to the time it is picked up by Haukes N.V. transport vehicles, meets all requirements in this protocol. Furthermore, because Haukes N.V. personnel are trained and equipped to respond to any releases of cyanide at the ports, they would be called upon to voluntarily respond to any such releases.

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


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

The operation is in full compliance with
 in substantial compliance with Transport Practice 3.1
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 3.1. Haukes N.V. has developed and maintains an Emergency Response Plan with procedures directing Haukes' Emergency Response Team in using its capabilities, training, equipment, and resources to manage a release of sodium cyanide briquettes onto land and into wet fields. The Plan also includes contact information to notify local authorities, outside emergency response providers, and company operations and safety management. The Plan also directs the Haukes Emergency Response Team with personnel and equipment in convoy vehicles, and based at the "Highway" Facility or at the Moengo Base Camp. In the case of larger releases, the Emergency Response Team would be dispatched to the scene with a specially equipped Spill Response Trailer. The Plan includes emergency contact information appropriate for each transportation route. The Plan specifies that the product is sodium cyanide and the physical form is solid briquettes. It is based upon the method of transportation being by truck, using flat bed trailers and ISO Tanks or Sea Containers. The Plan considers transportation over the approved routes, on paved and unpaved roads, in flat and hilly terrain. It also considers that the transport vehicle consists of a tractor and flat-bed trailer carrying one or two ISO-Tanks or Sea Containers. The Haukes N.V. Emergency Response Plan specifies response actions to be taken by Haukes Emergency Response personnel in the event of an accident, with or without a release of sodium cyanide and/or medical emergency. The Plan includes responsibilities of outside emergency response organizations including local police and fire departments, as well as emergency medical services, such as ground and air ambulances. The Plan also stipulates that policemen in the convoy will provide traffic control and restrict access to the area, Fire and Emergency Medical Personnel provide triage and transport for injured individuals (if necessary), and Emergency Response and Clean-Up Services defer to Haukes Environmental, Health & Safety Team for instructions.

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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
 in substantial compliance with Transport Practice 3.2
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 3.2. Haukes N.V. has provided emergency response training to the drivers and other convoy support personnel selected for transportation of sodium cyanide, particularly with regard to implementation of the Emergency Response Plan. Haukes N.V. has trained its own Emergency Response Team to respond to any release of larger quantities of this product while otherwise in the possession of Haukes N.V. The Emergency Response Plan clearly delineates the specific emergency response duties of drivers, other convoy personnel and emergency response personnel. The auditor reviewed the Response Equipment Listing provided in the Emergency Response Plan. The list includes equipment accompanying each convoy as well as that in an emergency response trailer stationed at "Highway" or at Moengo Base Camp to respond to larger spills. Equipment lists indicate that the necessary emergency response and health and Safety equipment, including PPE is available in the Spill Response and Emergency Vehicles attached to each convoy. Haukes N.V. has provided initial emergency response training conducted by the Newmont Suriname Mine and by Haukes' Learning and Development Center. (See Transport Practice 1.2.2) Furthermore, Haukes N.V. is committed to re-evaluate its Emergency Response Plan no less than annually. After evaluation, any necessary changes will be made. After the plan is either deemed adequate or amended, all personnel in Cyanide Service, including drivers and other convoy personnel, will receive updated refresher training. According to the Haukes N.V. Emergency Response Plan the Chemical Spill Kit Equipment will be inspected prior to each convoy leaving the port. The Convoy Leader will test the Satellite phone carried by each convoy at each rest stop along the transportation route.

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

The operation is in full compliance with
 in substantial compliance with Transport Practice 3.3
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 3.3. The Haukes N.V. Emergency Response Plan includes procedures and current contact information for notifying the mine, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency. Haukes N.V. is committed to up-date and re-evaluate its Emergency Response Plan no less than annually. After evaluation, any necessary changes will be made. After the plan is either deemed adequate or amended, all personnel in Cyanide Service, including drivers and other convoy personnel, will receive updated refresher training.


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
 in substantial compliance with Transport Practice 3.4
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 3.4. The Haukes N.V. Emergency Response Plan includes procedures for recovery of any spilled or released solids, decontamination of any soil or clean-up debris and neutralization of any non-recoverable sodium cyanide. The auditor confirmed that the Emergency Response Team, drivers and other convoy personnel have been trained and drilled on these procedures. Furthermore, the Emergency Response Plan clearly states that the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water, or could potentially reach surface water, is strictly forbidden.

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

The operation is in full compliance with
 in substantial compliance with Transport Practice 3.5
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Haukes N.V. is in full compliance with Transport Practice 3.5. The auditor verified that Haukes N.V. has conducted Mock Emergency Drills and is committed to conducting mock drills no less than annually. Also, the Emergency Response Plan will be reviewed whenever it is used to respond to an incident. If the plan has not been reviewed for one of the above reasons, a special review will be conducted to ensure that the plan is reviewed at least annually. Revisions to the Plan will be made as necessary, and any such revisions to the Plan will trigger re-training for all Haukes N.V. and other personnel affected.

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