



**REPORT**

# International Cyanide Management Code

*Satellite Trans, Re-certification Audit*

*Summary Audit Report*

Submitted to:

International Cyanide Management Institute  
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WASHINGTON, DC 20005  
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Submitted by:

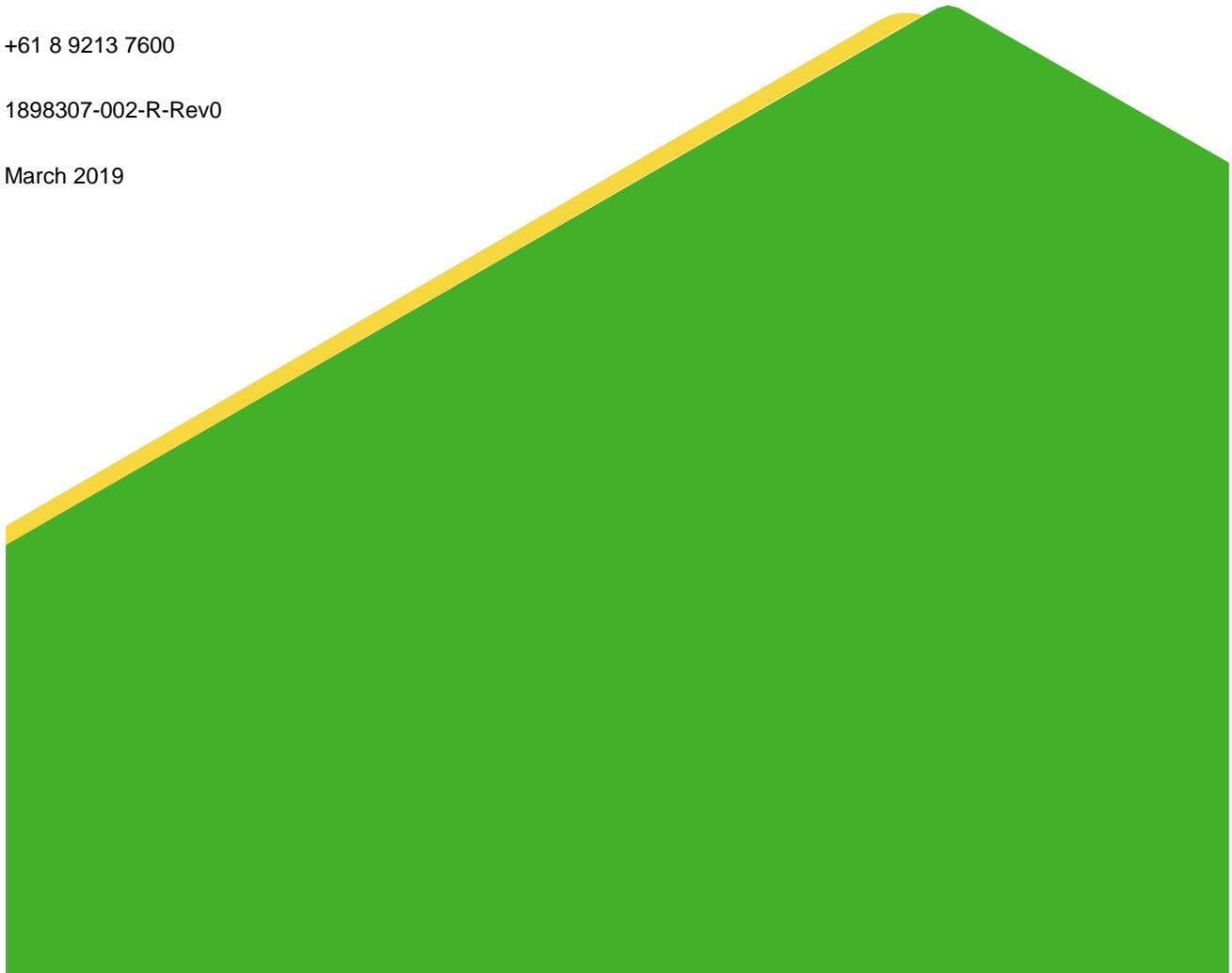
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## 1.0 INTRODUCTION

### 1.1 Operational information

<b>Name of Transportation Facility:</b>	Satellite Trans Limited
<b>Name of Facility Owner:</b>	Not Applicable
<b>Name of Facility Operator:</b>	Satellite Trans Limited
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## 2.0 CYANIDE TRANSPORTATION

### 2.1 Satellite Trans Limited

Satellite Trans Limited (Satellite Trans) is a Belgian transport company that established their first Ghana office in 2002 to provide freight forwarding and logistics services. They have been transporting hazardous materials and general goods for over 15 years servicing Ghana, Burkina Faso, Niger, Mali, Guinea, Togo, Benin, Côte d'Ivoire, and Liberia.

Satellite Trans has established systems to transport cyanide that is imported to Ghana through the Port of Tema and the Port of Takoradi. Sodium cyanide is imported in to Ghana in solid form as a >95% pure white briquette. The cyanide briquettes are packaged in Intermediate Bulk Containers (IBCs) of between 1000 to 1200 kg capacity. The briquettes are stored within a woven polypropylene bag, sealed with a polyethylene plastic liner, within a wooden crate. Consignments of stock are transported in standard shipping containers (sea containers) of up to a maximum of 24.2 tons.

Satellite Trans currently transports dangerous goods and general cargo within Ghana and between Ghana and Burkina Faso.

### 2.2 Trans-shipping and interim storage

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

## 2.3 Auditors Findings and Attestation

in full compliance with


**Satellite Trans is:**  in substantial compliance with **The International Cyanide Management Code**

not in compliance with

No significant cyanide exposures or releases were noted to have occurred during Satellite Trans recertification audit.

**Audit Company:** Golder Associates Pty Ltd  
**Audit Team Leader:** Mike Woods, Exemplar Global (113792)  
**Email:** mwoods@golder.com.au

## 2.4 Name and Signatures of Other Auditors

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Transport Technical Specialist		28 March 2019


## 2.5 Dates of Audit

The ICMC Recertification Audit was conducted over two days on 24 and 28 March 2018 at Satellite Trans facilities in Tema, Ghana with the Detailed Audit Report being finalised in 14 January 2019.

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

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

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## 3.0 CONSIGNOR SUMMARY

### 3.1 Principle 1 – Transport

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

#### 3.1.1 Transport Practice 1.1

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

Satellite Trans is  in full compliance with **Transport Practice 1.1**  
 in substantial compliance with  
 not in compliance with

#### Summarise the basis for this Finding/Deficiencies Identified:

Satellite Trans is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes to be selected to minimise the potential for accidents and releases.

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

The *Route Risk Assessment Procedure* guides the selection and review of transport routes. The procedure requires the initial planning of the transport route selection and review to include the following:


- Proximity to rivers and water.
- Proximity to schools.
- Number of villages and towns.
- Number and location of hospitals and clinics for emergency response.
- Type and number of bridges including an assessment of the condition and suitability.
- Communication blackout areas.
- Steep gradients and sharp corners.

Following the initial assessment, the routes are compared to determine the preferred route. If necessary, Satellite Trans seek assistance from the mine site and Ghana Environmental Protection Agency (EPA) and/or the Ghana Highway Authority and cyanide producer to determine the best possible route.

*Route Risk Assessments* incorporating the above were observed for:

- Tema Port Ghana – Burkina Faso (Burkina Mining)
- Takoradi Port Ghana – Burkina Faso (Burkina Mining).

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Hazards identified during the route assessment and selection process are risk assessed using the process detailed in the *Route Risk Assessment Procedure* as follows:

*In conducting the risk assessment the following process will be followed:*

- a) *Identifying the hazards (route assessment or survey)*
- b) *Analysing the risks*
- c) *Evaluating the risks*
- d) *Identifying all control measures*
- e) *Implementing the control measures*
- f) *Re-evaluating the risks*
- g) *Monitoring and review of risks.*

This process is conducted by the Transport Officer and Health Safety and Environment (HSE) Manager and includes them both travelling the transport route to selected to do a route survey in order to physically assess and record the risks and hazards on those routes. Each identified risk and hazard will then be risk assessed and controls implemented to mitigate risk. When the route has been accepted, a *Transport Management Plan* (TMP) is developed.

The *Route Risk Assessment Procedure* notes that route assessments will be reviewed and updated annually, or when there is a significant change to a transport route. The procedure also outlines that Satellite Trans will liaise with the EPA and Ghana Highway Authority on any intended changes to the designated cyanide transport routes.

*Feedback Reports* are completed by the Emergency Response Team Leader after the return of each journey. These forms, along with continuous journey feedback verbally provided by drivers on the state of roads are also taken into consideration in route assessments.


Satellite Trans does document the measures taken to address risks identified with the selected routes. The measures are detailed within the route risk assessment documents and in the Convoy Management Plan.

Satellite Trans does seek input from stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures. The *Route Risk Assessment Procedure* requires the review and assessment of available transportation routes including liaison with regulators such as the EPA and Ghana Highway Authority in order to understand their preferred route option. The procedure states that if necessary, assistance will also be sought from the mine site to determine the best possible route. The community is indirectly consulted through the EPA and through police and fire service.

The *Convoy Management Plan* (CMP) includes the following requirements of transport in convoys:

- Night driving is generally prohibited as far as transportation of sodium cyanide is concerned (consignments are permitted to depart Tema and Takoradi from 03:30 am to enable convoy to clear Accra and avoid traffic congestion).
- Convoys are limited to a maximum of eight trucks that maintain site of each other.

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- Trucks in convoy maintain radio or cell phone communication where and when necessary. In case of blackout areas a satellite phone may be used by the convoy.
- Escort personnel follow the Call Points along the route by calling the Logistics Officer in Tema between 6:00 am and 8:00 am.
- During stopover points the vehicles will be locked and not left unattended.

The TMP states that all transport vehicles shall be equipped with effective communication (mobile phone) and tracking systems.

The *Route Risk Assessments* list traveling in convoy with an escort is as a generic control to reduce risk for all convoys.

Satellite Trans has advised external responders and medical facilities of their roles during an emergency response. The *Emergency Response Plan* (ERP) identifies responsibilities for the Police, Fire Service, Ambulance, EPA, Water Resources Commission and the Mine Site as external responders.

Copies of letters sent to stakeholders (showing receipt date) which include copies of the TMP and ERP for stakeholder comment have been retained by Satellite Trans.

Satellite Trans does not subcontract the transport and handling of cyanide.

### 3.1.2 Transport Practice 1.2

**Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.**

in full compliance with

Satellite Trans is  in substantial compliance with **Transport Practice 1.2**  
 not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

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


Satellite Trans does only use trained, qualified and licensed operators for its transport vehicles. In order to drive a heavy duty truck the operator must hold a Class “F” Licence. All drivers are checked to confirm they have this licence before being employed and by Emergency Response Team Leader prior to each trip departure. The Emergency Response Team Leader also checks drivers have the required up to date training prior to departure. A review of drivers found them to have current Class “F” Licences.

The Ghanaian Police also carry out checks of licenses along the route and drivers would be subject to fines or other penalties if not appropriately licensed.

There is no requirement in Ghana for drivers to be licensed for dangerous goods transport.

All personnel operating cyanide transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures.

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The CMP details training requirements for drivers and escort personnel including that all old and new employees must have the following mandatory training prior to transporting:

- Defensive driving
- Basic fire fighting
- General cyanide awareness and familiarisation
- Mock drill training.

A review of training files showed that all drivers had completed the mandatory training.

Satellite Trans does not subcontract the transport and handling of cyanide.

### 3.1.3 Transport Practice 1.3

**Ensure that transport equipment is suitable for the cyanide shipment.**

**in full compliance with**

**Satellite Trans is**  in substantial compliance with **Transport Practice 1.3**  
 not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

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

Satellite Trans only uses equipment designed and maintained to operate within the loads it will be handling when transporting cyanide.


The Ghana National Road Transport Commission has prepared a guidance document *The Truck Drivers Guide – Ghana* which provides guidance on vehicle requirements, including:

- Required safety equipment
- Vehicle measurements
- Maximum driving periods
- Axle load restrictions (Allowable Maximum Gross Weight of Vehicles).

The TMP states that Satellite Trans conforms with all regulations and codes as applicable to the transportation of HAZMAT and general goods. These include:

- Ghana/Burkina Faso EPA Dangerous Goods (Handling and Storage) Regulations
- Ghana/Burkina Faso EPA Dangerous Goods (Transport)
- Ghana Ports and Harbour Authority Regulations
- Ghana/Burkina Faso Roads and Highway Regulations
- OHSAS 18001 – 2007 Standards.

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Satellite Trans operates seven axle trucks each with a flatbed trailer that is designed to carry one six metre (20 foot) container with a total weight of approximately 24.2 tonnes. The TMP states that prime movers and trailers shall be maintained to manufacturer's specifications and be subjected to government standards. Trucks and trailers suitable for transporting consignments will only be authorised by the Logistics and Transport Managers.

There are procedures to verify the adequacy of the equipment for the load it must bear.

The TMP states that prime movers and trailers shall be maintained to manufacturer's specifications and be subjected to government standards. Trucks and trailers suitable for transporting consignments will only be authorised by the Logistics and Transport Managers.

All vehicles (prime movers and trailers) are inspected using the *Pre-departure Checklist*. Specific truck/trailer combinations are also inspected (for transport of consignments) so that no combination is overloaded before leaving the port. Satellite Trans has also implemented a *Maintenance Procedure*. This procedure requires regular preventive maintenance services to be undertaken at or before the manufacturer's recommended mileage intervals. Services are undertaken by a qualified mechanic in accordance with the *Preventative Maintenance Service Chart* and the *Preventative Maintenance Checklist*.

Procedures are in place to prevent overloading of the transport vehicle being used for handling cyanide. All vehicles (prime movers and trailers) are inspected using the *Pre-departure Checklist*. Specific truck/trailer combinations are also inspected (for transport of consignments) so that no combination is overloaded before leaving the port.

Satellite Trans does not subcontract the transport and handling of cyanide.

### 3.1.4 Transport Practice 1.4

#### Develop and implement a safety program for transport of cyanide.

in full compliance with

Satellite Trans is  in substantial compliance with **Transport Practice 1.4**

not in compliance with

#### Summarise the basis for this Finding/Deficiencies Identified:


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

Satellite Trans has procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer's packaging.

The *Pre-departure Checklist* requires the inspector to check the following information:

- Inspect product information card for 1689 and marine pollutant
- Inspect container for correct labelling (marine pollutant and 1689)
- Check for container door seals
- Check trailer twist lock for damage, easy rotational, wear and greasing.

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The TMP requires the following information to be supplied to the mine site before the convoy leaves Tema or Takoradi Port:

- Verify container numbers or cross reference container seals and shipping documents
- Check that containers are undamaged and seals are in place
- Check that all placards are on the containers and replace where necessary.

Security seal checks are also undertaken throughout the journey from port to mine site.

Satellite Trans uses placards or other signage to identify the shipment as cyanide, as required by local regulations and international standards. Satellite Trans' *Pre-departure Checklist* requires a check for 1689 and marine pollutant labelling on containers. Diamonds showing the UN Number and pictogram are also placed on the front and rear of the trucks.

Satellite Trans implements a safety programme for cyanide transport that includes:

a) *Vehicle inspections prior to each departure/shipment?*

Satellite Trans has a *Maintenance Procedure* that requires vehicles to be inspected with the *Pre-departure Checklist*. It is the responsibility of the Emergency Response Team Leader to ensure that the trucks transporting the consignment have had the *Pre-departure Checklist* completed and are roadworthy.

b) *A preventative maintenance program?*

Satellite Trans has implemented a *Maintenance Procedure*. This procedure requires regular preventive maintenance services to be undertaken at or before the manufacturer's recommended mileage intervals. Services are undertaken by a qualified mechanic in accordance with the *Preventative Maintenance Service Chart* and the *Preventative Maintenance Checklist*.

A review of maintenance records for a sample of the fleet, interviews and inspections confirmed that preventative maintenance activities are undertaken.

c) *Limitations on operator or drivers' hours?*

Satellite Trans' CMP includes a Fatigue Management Policy that provides measures to control fatigue. This includes maximum daily driving hours of 10 hours, with maximum of 70 hours within rolling seven days and minimum 24 hour break in a seven day period. There are also designated stopping points and breaks as a minimum every four hours.

d) *Procedures to prevent loads from shifting?*

Cyanide is stowed into the freight containers by the producer. Solid cyanide is packed into United Nations approved composite IBCs that are stowed to minimise movement in transport. The securing systems appear to be as effective as reasonably practicable. Containers are secured using twist locks, which are designed and constructed to international transport standards. Twist locks are inspected prior to each departure and periodically during the journey.

- e) *Procedures by which transportation can be modified or suspended if conditions such as severe weather or civil unrest are encountered?*

Satellite Trans has a procedure to suspend operations for inclement weather or problems on the route.

The TMP notes that the Emergency Response Team Leader will manage the convoy suitably in adverse conditions. This will include adjusting convoy speeds due to bad roads, weather or dust conditions.

In the event of bad weather, the Emergency Response Team Leader will determine if it is safe for a convoy to start or continue with travel. If they determine that the convoy cannot continue the following steps are to be taken:

- Make use of the alternative route if one exists that is not affected by the existing bad weather conditions.
- If no alternative route exists, the convoy shall return or remain in the depot/yard and await instructions from the mine or for the weather condition to pass and then inform the mine that the convoy will now precede.

Alternatively, Emergency Response Team Leader will identify a safe parking area that exists and that was recorded in the route selection procedure. The convoy will park off and await mine instructions or for the weather to clear

- f) *A drug abuse prevention program?*

Satellite Trans has a *Zero Tolerance Drugs and Alcohol Policy*. The policies objectives are to

- To promote zero (0) tolerance drugs and alcohol policy at it work place
- To prevent drugs and alcohol problems by raising awareness and providing guidance on the symptoms, effects on work and health consequences of both drugs and alcohol
- To seek to identify a problem at an early stage and thus minimize risks to the health and safety of our employees and potentially safeguard the health and safety of fellow employees and others
- To recognize drugs and alcohol problems as medical conditions, which are potentially treatable and provide the means whereby those who have a problem can seek and be offered help in confidence by the company.

These objectives are managed by undertaking pre-employment and random alcohol testing in the work place.

- g) *Retention of records documenting that the above activities have been conducted?*

Records are maintained that the above activities have been conducted. Maintenance records, inspection and convoy records were samples through the audit period.

Satellite Trans does not subcontract the transport and handling of cyanide.

### 3.1.5 Transport Practice 1.5

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

**in full compliance with**

**Satellite Trans is**                       in substantial compliance with                      **Transport Practice 1.5**

not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

Transport Practice 1.5 requiring the operation follow international standards for transportation of cyanide by sea and air is NOT APPLICABLE to Satellite Trans.

Satellite Trans does not and does not intend to transport consignments of cyanide by sea within the scope of this audit.

Satellite Trans does not and does not intend to transport consignments of cyanide by air within the scope of this audit.

### 3.1.6 Transport Practice 1.6

**Track cyanide shipments to prevent losses during transport.**

**in full compliance with**

**Satellite Trans is**                       in substantial compliance with                      **Transport Practice 1.6**

not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

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


Satellite Trans' transport vehicles do have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders.

The CMP includes a communication procedure for convoys travelling between ports and mine sites to ensure the safe arrival of product. The procedure requires loaded trucks to inform the mine site via email or using a cell phone of their planned departure time. The departure time must also be logged into a communication log sheet and a journey plan completed by the delivery clerk before convoy departure. While in convoy, trucks must maintain radio or cell phone communication, with a satellite phone to be used in areas of communication blackout. Escort personnel must call the Logistics Officer in Tema at designated Call Points along the route. All calls are logged in the communication log sheet.

Satellite Trans' Pre-departure Checklist includes a check for mobile phone function. The CMP includes an Escort Vehicle Pre-trip Checklist; this requires a check for cell phones and chargers.

Each convoy has a GPS tracking system that continuously transmits position and other data from the convoy throughout the trip. Data collected includes vehicle identification, local time, status (i.e. end drive, parked, drive), current location, course, speed and fuel consumption.

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Client periodically tests the communication equipment (i.e. mobile phone, satellite phone, UHF radio) to ensure it functions properly. The Pre-departure Checklist includes a check for mobile phone function, as does the Escort Vehicle Pre-trip Checklist.

GPS tracking is checked prior to and throughout voyages through the review of reports generated by the tracking system.

Satellite Trans has identified that there are no blackout areas along the transport route.

The TMP states:

*Vehicles and/or the convoy shall be equipped with means of communicating quickly, efficiently and reliably. Route surveys have proven that the telecommunication services we have subscribed to in Ghana deals with all black out areas along the routes.*

However, the HSE Manager stated that black spots are also checked for during the route survey process.

The GPS tracking system continuously transmits position and other data from the convoy throughout the trip. Data collected includes vehicle ID, local time, status (i.e. end drive, parked, drive), current location, course, speed and fuel consumption.

Satellite Trans has implemented systems and procedures to track the process of cyanide.

The CMP requires Escort personnel to follow the Call Points along the route by calling the Logistics Officer in Tema between 6:00 am and 8:00 am for him to track their location and progress.


Satellite Trans utilises a tracking system to determine the convoy location. The GPS tracking system continuously transmits position and other data from the convoy throughout the trip. Data collected includes vehicle ID, local time, status (i.e. end drive, parked, drive), current location, course, speed and fuel consumption.

Satellite Trans has appropriate inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. Inventory controls are the primary method of preventing product loss during shipment. These controls include the following:

- Consignments are identified and documented (individual IBCs are identified by number, and each freight container number is recorded).
- All containers are locked with seals and the seal numbers are recorded and checked by the consignee. Seals are also checked at transfer locations and on route.
- The shipments are weighed when leaving the production facility and again when arriving at the mine site.
- The identifying container numbers are transmitted to the consignee and are checked off by the representative (driver) and consignee at the point of delivery.
- The waybill is signed by the Driver and receiver upon receipt. Upon signing, the customer representative is acknowledging that the consignment was received in good condition and unopened.

The controls in place would allow any loss of product to be promptly detected. The controls placed on empty containers on the return journey are the same as full ones.

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Shipping records do indicate the amount of cyanide in transit and Safety Data Sheets are available during transport. A review of delivery documentation together with pre-departure security checks confirmed that the amount of cyanide on each vehicle is recorded.

There is a copy of the emergency response plan with the safety data sheet (SDS) booklet held within the cabin of each vehicle.

Satellite Trans does not subcontract the transport and handling of cyanide.

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### 3.2 Principle 2 – Interim Storage

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

#### 3.2.1 Transport Practice 2.1

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

in full compliance with

Satellite Trans is

in substantial compliance with

Transport Practice 2.1

not in compliance with

#### Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 2.1 that requires transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures is NOT APPLICABLE to Satellite Trans.

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

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### 3.3 Principle 3 – Emergency Response

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

#### 3.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

in full compliance with

Satellite Trans is

in substantial compliance with

Transport Practice 3.1

not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

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

Satellite Trans has developed an emergency response plan for potential cyanide emergencies.

The *Sodium Cyanide Emergency Response Plan* (ERP) details:

- Purpose
- Scope
- Objective
- Response to a Cyanide Emergency/Incident
- Incident Management Objectives
- Incident Management Strategy
- Responsibilities
- Basic Incident Response Plan
- Decontamination of a Spill of Solid or Liquid Cyanide into Soil
- Use of Sodium Hypochlorite for Decontamination Purposes.


The TMP also details emergency response details.

The ERP is appropriate for the selected transportation route or interim storage facility. The *Specific Emergency Response Guide* Section details incident types and it includes scenarios for truck transportation. It details the following scenarios:

- Handling Wet Sodium Cyanide
- Roll-over of Shipping Container with spill in or outside a community
- Rollover of Cyanide container without spill in or outside a community.

For each section it provides the response actions required.

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A decontamination of a persons and equipment procedure is also included in the ERP. The ERP covers all transport movements controlled by Satellite Trans.

The ERP does consider both the physical and chemical form of cyanide. The ERP is based around the transport of solid cyanide and the potential for liberation of hydrogen cyanide gas if exposed to water. The ERP has been developed specifically for road transportation. The TMP details the transport of solid sodium cyanide via truck. The response actions detailed in Section 2.3 and Section 3 of the ERP are related to solid cyanide transportation by truck.

The consideration of transport infrastructure has also been undertaken by Client through route risk assessments and route assessments. Route assessments detail the condition of the road, traffic hazards, intersections and issues to be managed by the driver along the route.

The *Route Risk Assessment Procedure* considers the design of the intended transport vehicles:

*Solid sodium cyanide packaged in Intermediate Bulk Containers (IBC's) of 1000Kg capacity and containerised (20ft containers) will be transported by road using a 7 axle trucks with flat bed trailer. The sodium cyanide solid briquettes are stored within a polypropylene bag and sealed within a wooden crate as per the International Maritime Dangerous Goods Code for group 1 hazardous goods. The quantity of solid sodium cyanide in each 20ft container is 20 tons.*

The ERP has been written up based on the outcomes of the *Route Risk Assessment*.

The ERP includes a description of the response actions for an anticipated emergency situation.

The *Specific Emergency Response Guide* Section details incident types and it includes scenarios for truck transportation. It details the following scenarios:

- Handling Wet Sodium Cyanide
- Rollover of Cyanide Container with spill in or outside a community
- Rollover of Cyanide container without spill in or outside a community

A decontamination of a persons and equipment procedure is also included in the ERP.

The ERP details internal and external responsibilities in the event of an emergency. Responsibilities specific to the three emergency scenarios detailed in the ERP are also included in each *Specific Emergency Response Guide*.

The plan does identify the role of outside emergency responders. The ERP identifies the roles of outside responders and medical facilities in the event of an emergency. The role and responsibilities section details the following personnel in the event of an emergency:

- Emergency Response Team (ERT) Leader
- Vehicle Driver
- ERT
- Police
- Ambulance

- Fire Service
- Environmental Protection Agency
- Water Resources Commission
- Satellite Trans Ltd
- Mine Site.

In the event of an emergency, Satellite Trans will maintain overall responsibility and coordination.

- Emergency contact numbers for internal and external entities are provided as appendices in ERP.

### 3.3.2 Transport Practice 3.2

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

in full compliance with

**Satellite Trans is**  in substantial compliance with **Transport Practice 3.2**

not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

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

Satellite Trans does provide emergency response training of personnel to fulfil the duties outlined in the ERP.


Drivers are trained in the response actions to take in the event of an incident and a review of training records for drivers involved in cyanide transport confirmed that training had been provided. Response scenario training is provided annually, firefighting every two years and first aid every three years. A review of training records showed that all drivers had completed the mandatory training. The Emergency Response Team Leader checks drivers have the required up to date training prior to departure.

The ERP does identify the specific emergency response duties and responsibilities of personnel for response in the event of an incident.

Descriptions of the specific emergency response duties and responsibilities for internal personnel and external entities are detailed in the ERP. These personnel/entities include:

- ERT Leader
- Vehicle Driver
- ERT
- Police
- Ambulance
- Fire Service
- Environmental Protection Agency

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- Water Resources Commission
- Satellite Trans Ltd
- Mine Site.

In the event of an emergency, Satellite Trans will maintain overall responsibility and coordination. Emergency contact numbers for internal and external entities are provided as appendices in ERP.

The ERP does list the response equipment that should be available during transport. The quantity and condition of the equipment is checked as part of the Emergency Equipment Checklist and Escort Vehicle Pre-trip Checklist.

It is the Emergency Response Team Leader's responsibility to ensure that all emergency equipment is checked and are up to manufacturers' specification prior to convoy departure.

Satellite Trans does have the necessary emergency response and health and safety equipment, including personal protective equipment available during transport. Satellite Trans maintains a list of all of its emergency response equipment that should be available during the transport route. The quantity and condition of the equipment is checked as part of the Emergency Equipment Checklist and Escort Vehicle Pre-trip Checklist.

It is the Emergency Response Team Leader's responsibility to ensure that all emergency equipment is checked and are up to manufactures specification prior to convoy departure.

Records are retained showing that checks of emergency equipment are being undertaken prior to convoy departure.

Satellite Trans does provide initial and periodic refresher training in emergency response procedures. A review of training records showed that all drivers had completed the mandatory training. The Emergency Response Team Leader checks drivers have the required up to date training prior to departure.

Satellite Trans does have procedures to check emergency response equipment. The quantity and condition of the equipment is checked as part of the Emergency Equipment Checklist and Escort Vehicle Pre-trip Checklist.

It is the Emergency Response Team Leader's responsibility to ensure that all emergency equipment is checked and are up to manufactures specification prior to convoy departure. Records are retained showing that checks of emergency equipment are being undertaken prior to convoy departure.


Satellite Trans does not subcontract the transport and handling of cyanide.

### 3.3.3 Transport Practice 3.3

#### Develop procedures for internal and external emergency notification and reporting.

- Satellite Trans is  in full compliance with **Transport Practice 3.3**  
 in substantial compliance with  
 not in compliance with

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**Summarise the basis for this Finding/Deficiencies Identified:**

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

Satellite Trans has procedures and current contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency.

The ERP and TMP contain the following appendices:

- Appendix F: Emergency Communication Procedures
- Appendix G1: Emergency Call List
- Appendix G2: Medical Support and Emergency Equipment Contacts
- Appendix G3: Emergency Contacts of Other External Responders.

Emergency contact details for authorities, emergency responders and medical facilities are included in the above appendices. This includes internal emergency contacts, suppliers, mine site receivers, medical and emergency equipment contacts, and emergency contacts for other external responders.

Satellite Trans has systems are in place to ensure that internal and external emergency notification and reporting procedures are kept current.

The Route Risk Assessment is reviewed annually or when there is a significant change to a transport route. When this occurs, Satellite Trans liaise with the EPA and Ghana Highway Authority on any intended changes to the designated route. The TMP and ERP are then updated as required and re-issued to medical providers and emergency services along the route for comment on whether the facility has capacity and capability to respond to a potential cyanide incident. As part of this process, emergency responder contact information is checked and updated as required if comment is received from emergency responder.

**3.3.4 Transport Practice 3.4**

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

in full compliance with

**Satellite Trans is**

in substantial compliance with

**Transport Practice 3.4**


not in compliance with

**Summarise the basis for this Finding/Deficiencies Identified:**

Satellite Trans is in FULL COMPLIANCE with Transport Practice 3.4 requiring that they develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

Satellite Trans has a procedure for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris.

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The ERP and TMP include descriptions of the response actions for an anticipated emergency situation. The ERP includes the following sections covering clean up and decontamination:

- Basic Incident Response Plan
  - First Response
  - Establishing Control of the Incident
- Basic Decontamination of a Contaminated Persons
  - Decontamination of Personal Protective Equipment
- Specific Emergency Response Guide
  - Handling wet sodium cyanide
  - Roll-over of shipping container with spill in or outside a community
  - Rollover of cyanide container without spill in or outside a community.

Satellite Trans prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

Satellite Trans personnel will undertake containment and clean up of spills and maybe assisted by the mining customer depending on the location of the incident. Recovered materials/impacted soil would be transported to the mine site for management and disposal.

The ERP and TMP both state:

*Under no circumstances will sodium hypochlorite or Ferrous Sulphate or any cyanide neutralizing chemicals be used in neutralizing cyanide that has entered surface water as this is strictly prohibited.*

### 3.3.5 Transport Practice 3.5

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

**in full compliance with**

**Satellite Trans is**                       in substantial compliance with                      **Transport Practice 3.5**

not in compliance with


**Summarise the basis for this Finding/Deficiencies Identified:**

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

The ERP contains provisions for periodically reviewing and evaluating the plan’s adequacy and they are being implemented. Satellite Trans has reviewed and updated the ERP during the audit period and conducted several mock drills that covered both worker exposure and environmental release.

The ERP contains provisions for periodically conducting mock emergency drills and they are being implemented. Satellite Trans has conducted several mock drills for cyanide related transport scenarios during the audit period.

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There is a procedure to evaluate the ERPs performance after its implementation and revise it as needed. The ERP provides:

*In case of any transportation incident and an investigation report issued, the company will review and revise the Emergency Response Procedures. Also, the ERP will be reviewed when necessary based on findings from mock drills conducted by Satellite Trans Ltd.*

Satellite Trans did not have to implement the plan during the audit period but has undertaken reviews of the ERP during the period. The Plan was last updated in 2017.

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## 4.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled – “Important Information Relating to this Report”, which is included in Appendix A of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

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## Signature Page

### **Golder Associates Pty Ltd**



Mike Woods  
*ICMC Lead Auditor and ICMC Transportation Expert*

MCW/EWC/ds

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**APPENDIX A**

# Important Information

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to its client ("Client") under and subject to a contract between Golder and its Client ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to its Client under the Contract.

This Report is provided for use solely by Golder's Client and persons acting on the Client's behalf, such as its professional advisers. Golder is responsible only to its Client for this Report. Golder has no responsibility to any other person who relies or makes decisions based upon this Report or who makes any other use of this Report. Golder accepts no responsibility for any loss or damage suffered by any person other than its Client as a result of any reliance upon any part of this Report, decisions made based upon this Report or any other use of it.

This Report has been prepared in the context of the circumstances and purposes referred to in, or derived from, the Contract and Golder accepts no responsibility for use of the Report, in whole or in part, in any other context or circumstance or for any other purpose.

The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

Golder accepts no responsibility for and makes no representation as to the accuracy or completeness of the information provided to it by or on behalf of the Client or sourced from any third party. Golder has assumed that such information is correct unless otherwise stated and no responsibility is accepted by Golder for incomplete or inaccurate data supplied by its Client or any other person for whom Golder is not responsible. Golder has not taken account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

**Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification**



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