

GRUPO SEMISA

Cyanide Transportation

Preoperational

Summary Audit Report

For The

International Cyanide

Management Code

January 2020

Bruno Pizzorni

Cyanide Auditor

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Information on the Audited Operation

Name of Cyanide Transport Operation:	Grupo SEMISA (Capesa & Co. S.R.L / Transportes Valentín S.A.)
Name of the Company Ownership	Grupo SEMISA
Name of Operating Company:	Grupo SEMISA
Name of Responsible Manager:	Matías Gonzalez Responsable de Administración. (0264) 4286065 mgonzalez@gruposemisa.com
Address:	General Mosconi s/n entre calles 5 y Progreso. Villa Krause CP 5425 - Rawson - San Juan - Argentina

Location detail and description of operation:

Grupo Semisa is made up of Semisa S.R.L. and Capesa and Company S.R.L. and Transportes Valentín S.A. forming a group of companies dedicated to the activities of transport services, logistics and provision of human resources.

Semisa S.R.L. It is a company dedicated to passenger transportation, general and dangerous cargo transportation, mechanical maintenance, logistics and human resources provision.

Capesa and Company S.R.L. and Transportes Valentín S.A. are companies dedicated to the transportation and logistics of general and dangerous loads, warehouse management, coding and dispatch of merchandise in general.

Grupo Semisa is certified in ISO 9001: 2015, 14001: 2004, OHSAS 18001: 2007. The services provided include the transport of general cargo, dangerous cargo, household waste, storage service and merchandise coding.

The headquarters of Grupo Semisa is in the southern access of the province of San Juan, in the department of Rawson, Argentina (<https://goo.gl/maps/zufdbKYuV9G2>). It has offices and facilities for the logistics center of operations, workshop personnel to perform predictive, preventive and corrective maintenance of all fleet units, spare parts warehouse, fuel supply tank, tire sector, sector of metallurgical for repairs of bodies and interiors of the units, laundry sector for cleaning of all fleet units, dining area for their drivers and training room for drivers.

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Auditor's Finding

This operation is

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

Audit Company:	Bruno Pizzorni		
Audit Team Leader and Technical Auditor:	Bruno Pizzorni	E-mail:	bpizzorni73@gmail.com
Date(s) of Audit:	January 21 and 22, 2020		

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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Principle 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 Transport Practice 1.1
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

Grupo Semisa (Semisa) has implemented a process to assess the risks on routes, to select the best transport route that will minimize the potential of accident and potential impact of releases. Semisa personnel travel the route before the first shipment, consigning population density, road characteristics and signaling, check points, bridges, road infrastructure and prevalence of fog. Semisa committed to incorporate into its road risk assessment pitch and grade as well as proximity of water bodies.

Risks of the selected transport routes are evaluated by mean of the same worksheet used for road selection. Once identified the road characteristics, they record information about the risk level, the associated risks and risk control, including pictures of the area.


Semisa reevaluates periodically the routes and when necessary. Drivers must complete the Daily Report Book, where among other incidents of the equipment or the route, they must report any danger or risk detected on the road during their daily journey. By other side, the route evaluation has expiration date, stated according to the road difficulty and ha to be reevaluated again.

In addition, drivers on route report via WhatsApp application, images regarding the conditions of the route where cyanide is transferred, in order to provide feedback with everyone involved.

The transporter documents the measures taken to address risks identified with the selected routes in the same worksheet used during the road evaluation. In addition, Semisa manages a risk evaluation matrix for each route, where documents the control measures required to mitigate the risks identified on route.

Although the transporter seeks input from its clients, the applicable governmental agencies as police controls, Civil Defense and CIPET (Emergency Transportation Information Center), it was not found documented evidence. Semisa committed to

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maintain documentation on its interaction with CIPET, stakeholders or other parties in the route during route evaluations, before beginning any cyanide transport.

According to the client's requirement, where routes present special safety or security concerns, and if required by local regulations, Semisa uses convoys to transport hazardous materials. The convoy has a pickup vehicle as escort, a Convoy Leader and a mechanic to address the concern. Configuration of cyanide convoys varies according each need.

Before transporting cyanide, Semisa will advise CIPET, external responders, medical facilities and communities if necessary, of their role and mutual aid during an emergency response.

1.1 (8) If the transport company subcontracts any of the cyanide handling or transport, does the transport company implement a procedure to ensure its subcontractors meet elements 1, thru 7 of this Transport Practice 1.1?

Semisa will not subcontract any of the cyanide handling or transport operations. All transport of cyanide will be performed with their own trucks.

Transport Practice 1.2:

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

The operation is:


- in full compliance with Transport Practice 1.2
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

All drivers in Semisa are trained, qualified and licensed. The procedure *Selection, hiring and provision of personnel* requires for drivers, a test of driving and truck technical competences in field is to be carried out. The selected applicant must take the medical exams and the courses requested by the company. Those drivers transporting hazardous materials (hazmat) are trained in this matter, in defensive driving, materials compatibility, and in general goods transportation. Before being allowed to transport hazmat, all drivers must be in full compliance with all the above requirements. New drivers first must travel under close supervision of an experienced driver before being allowed to drive alone.

Although Semisa is not yet transporting cyanide, its personnel have already received initial training on cyanide. Interviews with drivers, dispatch, administration and maintenance personnel, as well as training records, were used to confirm that all personnel were trained in the matter.

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Transport Practice 1.3:

Ensure that transport equipment is suitable for the cyanide shipment.

The operation is:

- in full compliance with Transport Practice 1.3
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

Semisa has appropriate trucks and trailers designed and maintained to operate within the loads it will be handling. The transporter maintains a fleet of Mercedes Benz (80%), Iveco and Scania trucks, along with semitrailers for cargo transport. All trucks rated above 400 horsepower (hp), which allows adequate performance in the steep roads at los Andes Mountains. Each truck with its semitrailer will haul only one 20 feet sea container with 20-ton solid sodium cyanide. Semitrailers are 14.5 meters long. The rated load capacity of the transport trailers is 28 tons, which is greater than the 22 tons gross weight of the loaded sea containers that Grupo SEMISA expects to transport.

The auditor reviewed the manufacturer specifications and the biannually RTO (mandatory technical review) from the Argentinian Ministry of Transport which specifies the maximum load the vehicle can transport. During this technical review, all elements related to cargo capabilities are evaluated, as the state of tires, axis and chassis, among others.

Vehicles maintenance, during its guarantee period, is only performed in the manufacturer authorized workshops. Semisa has their own maintenance workshops where all other maintenance is performed. Maintenance for each vehicle is tracked through an own developed software.

Semisa has developed and implemented the *General Loading Procedure* and the procedure *Hazardous Cargo Transport* to establish the activities, controls, registers and necessary indicators to execute the transport service, which includes procedures to verify the adequacy of the equipment for the load it must bear.

Semisa will specify instructions into the procedure for cargo transport to prevent overloading the vehicle to transport cyanide containers. Will describe the current process in practice to select trucks and semitrailers according to the type of load and weight. It should be noted that they will transport a single 20 feet sea container with cyanide by semitrailer.

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Transport Practice 1.4:

Develop and implement a safety program for transport of cyanide.

The operation is:

- in full compliance with Transport Practice 1.4
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

Semisa will specify instructions into its Standard Operation Procedure (SOP) for cargo transport describing the controls to be carried out to guarantee the integrity of the load, specifying who will be responsible and when to check the integrity of the container, twist locks properly securing the container, door with seals and required signaling.

During transport, the containers will be secured to the semitrailer bed using locking clamp mechanisms that are part of the trailer. The clamps are located at fixed positions on the trailer so that the container is balanced during transport.


Semisa will specify in its procedures inspections to ensure each cyanide container is labelled to identify the shipment as cyanide to meet International Marine Dangerous Goods (IMDG) Code labelling requirements and local regulations.

Prior to the vehicle departure, inspections sheets are completed and signed by the driver and the convoy leader (if in convoy), prior to the vehicle leaving its base. Semisa procedures require prior to departure of cargo, the driver and the convoy leader conduct a pre-trip inspection of the vehicle and the semitrailer, to ensure the vehicle is in good operating condition.

Semisa has developed and implemented the procedure *Maintenance Process* and a maintenance software to provide on time preventive maintenance to its vehicles. Maintenance for each vehicle is tracked through the software called *Evo Gestion*, which provide information regarding preventive and corrective maintenance, following up of required actions and alerts when next maintenance will be required. The system is fed by the vehicle pre-use inspections, where any needed corrective action is registered, including drivers' feedback.

The transporter has limitations on its drivers' hours for hazardous cargo. Drivers are limited to an "on-duty" workday of 12 hours. Driving activities for hazardous cargo is established to be between 5 am and 9 pm, any activity detected out of this range, will shut an alarm in

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the 24-hour satellite tracking system Sitrack at the control room and reports will be automatically to supervisors.

Semisa procedure for securing and blocking cargo *Safety Recommendations in Securing Loads* calls for the securing of the containers to the trailer bed using the clamping mechanisms that are part of the trailer itself. The integrity of the clamping mechanism and the attachment point on the container is checked during a pre-trip inspection prior to the departure of the truck or the cyanide convoy.

Semisa's Driving Safety Procedure empower the driver and / or the convoy leader in coordination with the Health, Safety and Environment (HSE) Manager to suspend or to modify transportation if conditions to travel are not appropriate. They are responsible for evaluating weather and road conditions and determining what actions should be taken.

Semisa has a drug and alcohol politic and prevention program which were reviewed during the audit. Before each trip, Semisa drivers must undergo alcohol testing and periodically disclose evidence of drug use.

The operation retains records documenting its safety program, including procedures, inspections, preventive maintenance, driving hours and alcohol tests, among others.

Transport Practice 1.5:

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

The operation is:

- in full compliance with Transport Practice 1.5
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

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

Transport Practice 1.6:


Track cyanide shipments to prevent losses during transport.

The operation is:

- in full compliance with Transport Practice 1.6
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

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All drivers and personnel involved in the transport operation are provided with cell phones and a contact list to communicate with the transport company, the cargo dispatcher and emergency responders. The transport operators have a communications group in WhatsApp application where any novelty or alert in the operation is reported. For emergencies, drivers are trained on who to call and what to say, according to that stated in the Emergency Response Plan, of which they carry a copy in the vehicle. All drivers wear a card with the emergency contact list.

All trucks are equipped with two-way VHF radios to communicate between them and from specific sectors from the route to their main mining client. Trucks are also equipped with GPS that always allows Semisa to track their units all time, with periodic reporting to the operation and the client, according to settings.

Communications equipment is tested to insure it functions properly before the vehicle's departure. A GPS identifying code is assigned to the truck from the Monitoring Center and will ensure that the truck has a working GPS checking if it is transmitting its position. Minor reparations to radio equipment are performed at the truck shop and maintenance is periodically performed by an external provider.


Semisa identifies communication blackout areas, or *grey points*, during the route risk assessments, but no special procedure has been implemented for these sectors. Semisa will implement a safety procedure when entering to communications black areas before beginning its cyanide transport operation.

Semisa has a the Sitrack GPS tracking system which allows, among other utilities, continuously monitoring of the location of the trucks. Communications with the base are performed upon dispatch, upon arrival at the customer sites, and after unloading is complete.

Semisa has inventory controls and chain of custody documentation to prevent loss of cargo during shipment and will keep these controls when transporting cyanide. Upon client's authorization for cargo, Semisa issues a bill of lading called *Remito*, indicating the cargo weight, name of the product, class, quantity, origin, place of delivery, seal number, departure and arrival hour, signature and stamp of the client indicating that they received the cargo in conformance.

Semisa's shipping paperwork details the amount and weight of the cargo in transit and must travel with the product Material Safety Data Sheets (MSDS). Examples of bills of lading and shipping papers reviewed clearly indicates the number of packages and amount of cargo transported.

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Principle 2, Interim Storage:

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

Transport Practice 2.1:

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

The operation is:

- in full compliance with Transport Practice 2.1
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

Semisa will not operate cyanide trans-shipping depots or interim storage sites in its transport operation. If a delivery is interrupted, loaded cyanide trucks would be stored in a secure location. Principle 2, Interim Storage, does not apply to the operation.

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Principle 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 Transport Practice 3.1
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

Semisa has the emergency response plan *Contingency and Emergency Plan*. In occasion of the ICMI preoperational audit Semisa was developing response procedures for cyanide related emergencies.

The plan is appropriate for the selected transportation routes. It is designed for specific emergency circumstances that could arise during cargo transportation, including Hazardous Materials (HAZMAT) potential releases. It considers appropriate response actions for emergencies, includes details regarding responsibilities, communications procedures, updated notification numbers for emergency responders. The Plan was found to be up-to-date and appropriate for the actual transport operation.

Before starting their cyanide cargo operation, Semisa will have an updated emergency response plan where appropriate response actions will be included for cyanide emergency scenarios as releases and exposures.


The Plan will consider the physical and chemical form of the cyanide. Semisa will transport solid sodium cyanide in briquettes.

The plan will consider the method of transport for cyanide. Semisa will transport one 20-foot container per truck with 20 boxes of 1-ton of sodium cyanide each.

Semisa's actual plan considers the conditions of the roads (highway, secondary and mine roads) and urban areas, bridges conditions and danger of landslides on the route, among others, and address the emergency response to events that could occur in relation to these risks and hazards. The plan, when updated for the cyanide transport operation, will include water bodies, inclination and slope of the road.

Semisa's plan describes the design and configuration of the transport vehicle in the plan. The document states that must follow local regulation and describes the vehicles

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configuration as truck plus semitrailer as appropriate for each cargo and route, for example to transport HAZMAT to mining sites into the Andes heights.

The current plan includes descriptions of response actions for HAZMAT releases and exposure incidents, such as first aid and medical assistance, as appropriate for the anticipated emergency during transportation. Before beginning its cyanide transport operation, Semisa will include descriptions of response actions for cyanide transportation emergencies.

3.1(8) Does the plan identify the roles of outside responders, medical facilities or communities in emergency response procedures?

The current plan does not establish the roles of outside responders, medical facilities or communities in emergency response procedures. Semisa will identify the roles of these entities on updating its plan.

Transport Practice 3.2:

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

The operation is:

- in full compliance with Transport Practice 3.2
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:


Semisa provides emergency response training to all drivers, convoy leaders, managers, maintenance shop, logistics, Control Center and to surveillance service personnel at the company's headquarters. They receive an appropriate level of training to fulfill their role in emergency response.

The current plan describes the personnel responsibilities and duties for the specific emergency response.

The plan includes a list of the anti-spill kit. Semisa will include in the plan a complete emergency response list of materials, equipment and first aids related to cyanide emergencies, that should be available either in the transport vehicle or in the escort truck during a cyanide transport operation.

Semisa has available the emergency response and health and safety equipment available, including personal protective equipment, necessary for general cargo and HAZMAT materials. A checklist is used to verify that the emergency equipment it is available, and it is documented in the convoy report. Semisa will include equipment for cyanide related

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emergencies, as first aids kits, antidote and oxygen and all the necessary material to prevent HCN formation and to collect cyanide spills.

Semisa's vehicle operators receive initial and periodic update training in emergency response procedures, including implementation of the emergency response plan. Semisa will train all personnel involved in the cyanide transport operation in the emergency response plan once it is updated with cyanide emergency response actions.

Semisa inspects the emergency response equipment to assure its availability when required. This practice will be included into the *Transport Procedure* before beginning the cyanide transport operation.

Transport Practice 3.3:

Develop procedures for internal and external emergency notification and reporting.

The operation is:

- in full compliance with Transport Practice 3.3
- in substantial compliance
- not in compliance

Discuss the basis for this Finding/Deficiencies Identified:

The notification procedures, including telephone numbers, are described in the emergency response plan. It includes procedures and current contact information for notifying the the shipper, the receiver, regulatory agencies and potentially affected communities of an emergency. It lists current emergency numbers for local hospitals, ambulance, firefighters, police and environmental responders.

Semisa will include in the plan settings to ensure that internal and external emergency notification and reporting procedures are kept current. The auditor requested that an adequate frequency must be established for this purpose.

Transport Practice 3.4:


Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

The operation is:

- in full compliance with Transport Practice 3.4
- in substantial compliance
- not in compliance

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Semisa will develop and implement procedures for remediation, such as recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris.

Semisa will state in a procedure or in the emergency response plan the prohibition to chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

Transport Practice 3.5:

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

The operation is:

- in full compliance with Transport Practice 3.5
- in substantial compliance
- not in compliance


Discuss the basis for this Finding/Deficiencies Identified:

The emergency response plan states it should be reviewed for adequacy if necessary, after an incident, a mock drill or due to periodical updates, at least every two years.

The plan states to conduct annual mock emergency drills. The auditor reviewed emergency drills performed for HAZMAT. Once Semisa has updated its emergency response plan where cyanide related emergencies will be included, will perform an emergency mock drill simulating a cyanide spill and / or exposure.

Semisa will develop and implement a procedure to evaluate the plan's performance after its implementation and revise it as needed.

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