REPORT

# International Cyanide Management Code Recertification Audit

*Anqing Shuguang Supply, Sales and Transportation Co., Ltd – ICMC Transport Recertification Audit Summary Report*

Submitted to:

**International Cyanide Management Institute (ICMI)**
1400 I Street, NW
Suite 550
WASHINGTON DC 20005
UNITED STATES OF AMERICA

**Anqing Shuguang Supply, Sales and Transportation Co., Ltd**
No. 18, Environmental Protection Intelligent Manufacturing Industrial Park, Daguan District, Anqing City, Anhui Province, China

Submitted by:

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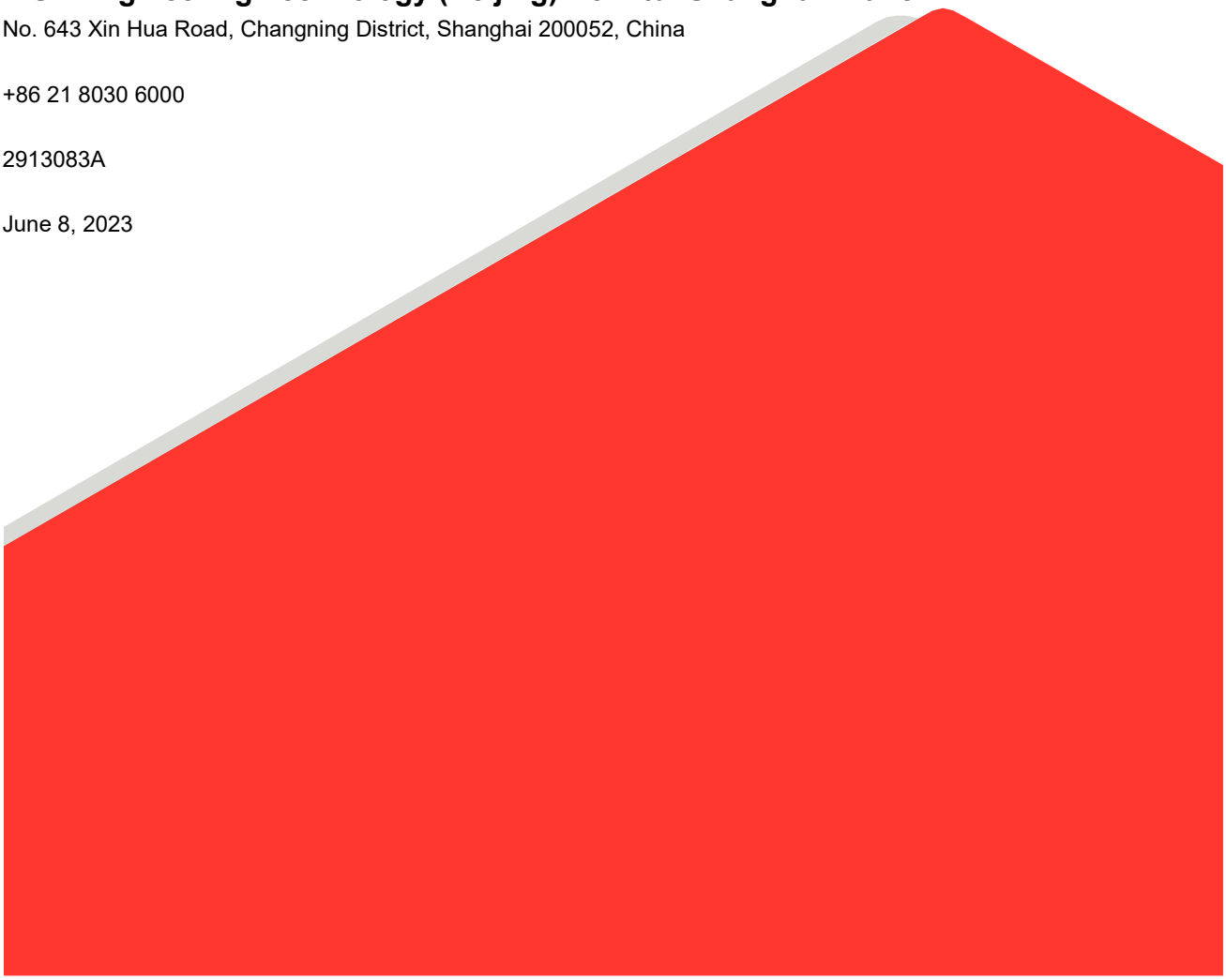
June 8, 2023



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# 1.0 INTRODUCTION

## 1.1 Operational Information

| | |
|---|---|
| **Name of Production Facility:** | Anqing Shuguang Supply, Sales and Transportation Co., Ltd |
| **Name of Facility Owner:** | Anqing Shuguang Supply, Sales and Transportation Co., Ltd |
| **Name of Facility Operator:** | Anqing Shuguang Supply, Sales and Transportation Co., Ltd |
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## 1.2 Operation Location Detail and Description

Anqing Shuguang Supply, Sales and Transportation Co., Ltd (hereinafter referred to as “Shuguang Transport”) was established in 1995 and is located at No. 18, Environmental Protection Intelligent Manufacturing Industrial Park, Daguan District, Anqing City, Anhui Province, China, which is approximately 150 km south of Hefei City- the capital of Anhui Province. Shuguang Transport is approved by Anqing City Bureau of Transport for road transportation and handling of dangerous goods. Shuguang employs over 78 people for the transport operation and has a fleet of 40 vehicles that are licensed and certified to transport dangerous goods.

The sodium cyanide product is manufactured and packaged by Anhui Anqing Shuguang Chemical Co., Ltd. (the production company). Solid cyanide is packaged in 50 kg metal drums, 1 tonne intermediate bulk containers or 1.1 tonne intermediate bulk containers and then into shipping containers. Shuguang Transport does not transport liquid cyanide from February 2020. All packaging is undertaken by the production company.

Table 1 provides a summary of Shuguang Transport’s main routes for solid cyanide. Shuguang Transport uses 10 main transport routes to their customers within China.

**Table 1: Summary of Main Transportation Routes**

| SN. | Destination | Distance | Product |
|---|---|---|---|
| 1 | Shanghai Port (Client’s dangerous goods warehouse) | 601 km | Solid |
| 2 | Jinjiang City, Fujiang Province | 879 km | Solid |
| 3 | Shenyang City, Liaoning Province | 1963 km | Solid |
| 4 | Nantong City, Jiangsu Province | 576 km | Solid |
| 5 | Jinjiang City, Fujian Province | 842 km | Solid |

| SN. | Destination | Distance | Product |
|---|---|---|---|
| 6 | Xuzhou City, Jiangsu Province (Commenced from 2022) | 523 km | Solid |
| 7 | Shangyu City, Zhejiang Province (Commenced from 2022) | 591 km | Solid |
| 8 | Ningbo City, Zhejiang Province (Commenced from 2022) | 672 km | Solid |
| 9 | Shenzhen City, Guandong Province (Commenced from 2022) | 1147 km | Solid |
| 10 | Dali City, Yunnan Province (Commenced from 2022) | 2798 km | Solid |

Cyanide is loaded onto the trucks at the production facility and from there is transported directly to the customer or port.

## 1.3 Transit Storage

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

# 2.0 AUDITORS FINDINGS

Shuguang Transport is

☒ **in full compliance with**

☐ in substantial compliance with

☐ not in compliance with

**The international Cyanide Management Code**

Shuguang Transport has not experienced any compliance issues during the previous three-year audit cycle.

## 2.1 Auditor Information

The audit was undertaken by (Lead Auditor and Technical Specialist) and Zoey Tang (Auditor Trainee) of WSP Engineering Technology (Beijing) Co. Ltd. Shanghai Branch. Auditors' information is as below:

**Audit Company:** WSP Engineering Technology (Beijing) Co. Ltd. Shanghai Branch

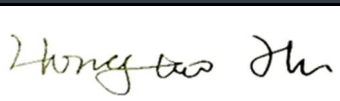
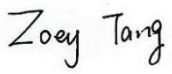
**Audit Team:** Hongtao Hu- Lead Auditor and Transport Technical Specialist

Zoey Tang- Auditor Trainee

**Email:** hongtao.hu@wsp.com

zoey.tang@wsp.com

**Names and Signatures of Other Auditors:**

| Name | Position | Signature | Date |
|---|---|---|---|
| Hongtao Hu | Lead Auditor and Transport Technical Specialist |  | 8 June 2023 |
| Zoey Tang | Auditor Trainee |  | 8 June 2023 |

**Dates of Audit:** 9 to 10 March 2023

## 2.2 Auditor Attestation

I attest that I meet the criteria for knowledge, experience and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, 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 Cyanide Code Auditors.

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

# 3.0 PRINCIPLES AND TRANSPORT PRACTICES

## 3.1 Principle 1 | TRANSPORT

**Transport cyanide in a manner that minimizes the potential for accidents and releases.**

### 3.1.1 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

☐ not in compliance with

**Transport Practice 1.1**

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

Shuguang Transport has implemented a process for selecting transport routes that minimizes the potential for accidents and releases or the potential impacts of accidents and releases.

Shuguang Transport has developed and implemented a management system for transportation and there is a specific written procedure that details the process and parameters to be assessed while identifying, selecting and assessing potential transport routes.

The procedure does include the assessment of:

1. Ecological Environment: Living water resource, large lake, river, agro-ecological areas, nature reserves, culture heritage.
2. Population density: market towns, parks, schools, factories, stations, railways, ports and other public facilities
3. Road conditions: traffic flow, road conditions, slopes, sharp turns, bridges, tunnels, pitch and grade.
4. Natural conditions: fog, typhoons, heavy rain, ice, snow, sandstorm and natural disasters occurring areas.

In addition, the roads assessed by Shuguang Transport need to be approved by local police authorities for the transport dangerous goods.

Shuguang Transport has implemented a procedure to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks.

The procedure involves the collection of route data and hazards from driving the potential routes by safety and dispatch personnel. The hazards are evaluated based on a scoring system and a risk assessment is generated.

For new routes, Shuguang Transport will arrange vice team leader to evaluate transport route individually before official transportation of cyanide personally. Solid Cyanide Transportation Route Assessment Reports for the 5 routes of 2022 has been provided for review, which have covered the element listed in Procedure on Selection and Evaluation of Cyanide Transport Routes.

For old routes, there is an annual review and update of the route assessment in accordance with drivers' collection on route data and hazards. The hazards are assessed against scoring system to generate the risk assessment. Solid Cyanide Transportation Route Periodically Assessment Sheets for the old routes has been provided for review.

For all clients' destinations, there is one primary and two alternative routes. The selection of the primary route is based on the highest overall score and the alternative route will be used in the event the primary route is compromised (e.g. major construction, accident).

The assessment is signed and confirmed by the drivers, escorts, coordinators, safety supervisors. Once this review is completed, the route is approved by the general manager. Once this pre-assessment is completed, approval must be sought from the local government for use of the route.

Shuguang Transport has implemented a process to periodically re-evaluate routes used for cyanide deliveries and also has a process for getting feedback on route condition from the transporters' operators.

Route assessments are reviewed and updated annually and then used to brief drivers on routes and control measures. Records of route assessments were provided for review, and training records were available for the driver briefings, which included the requirement for driver feedback on the transport route condition. In addition, drivers and escorts can provide feedback through the regular inspection records.

Five new routes were introduced in 2022. Annual route assessment documentations were reviewed and confirmed that Shuguang Transport has completed assessment and reviewed in accordance with their procedures.

Shuguang Transport documents the measures taken to address risks identified with the selected routes.

The route assessment document details the measures taken to address risks of selected routes. This is then communicated verbally to drivers during briefing sessions, and attendance records are retained.

Copies of route assessment were reviewed and confirmed to contain details on the control measures such as:

- Posted speed limits must also be obeyed, will automatically activate alarm to remind drivers when speed exceeds 80 Km/h.
- Trucks must slow down when passing through villages and give way to pedestrians.
- When passing schools, the trucks must avoid the school start and finish time.
- The trucks must keep a distance of at least 150 metres away from the water resources and the vehicles ahead.
- The trucks must not overtake on bridge.

The emergency contact information of hospital and environmental agency was also identified in the assessment report.

Shuguang Transport seeks input from applicable governmental agencies, communities and other stakeholders as necessary in the selection of routes and development of risk management measures.

As noted, the approval of the local authority is required prior to the transport and are provided with a copy of the route assessment.

Each shipment requires a permit "Road Transportation Permission for Highly Toxic Chemicals" to be issued by the local authority which allows cyanide to be transported along the designated route for a specified timeframe.

There is also a requirement that the local police must be notified if the shipment needs to stopped overnight. The requirement for noticing local police has been specified on the online application system.

Shuguang Transport prepared a list of hospitals, environmental protection department and fire-fighting bureau for each route. And Shuguang Transport has also contacted the hospitals identified along each of its transport routes and provided them with information about cyanide hazards and potential response actions.

All engagements of external stakeholders are managed by Shuguang Transport.

Shuguang Transport has assessed its routes and concluded that no routes require additional control measures for special safety or security considerations.

Shuguang Transport has two drivers for each vehicle with the off-duty driver assuming the role of escort. The emergency response plan is carried in the cabin of the vehicle and contact is to be made with local police in the event of an incident.

If an area is identified as a security concerns area, Shuguang Transport's system states that the local police are to be contacted to provide and escort through the area. The escort is conducted by local police, such as the transportation in some areas of Yunnan province.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid 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.

**The operation is**

☒ **in full compliance with**

☐ in substantial compliance with **Transport Practice 1.2**

☐ not in compliance with

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

Shuguang Transport only uses trained, qualified and licensed operators to operate its transport vehicles.

Each employee has been established a personal file, including training records, examination records and certificates.

The Procedure for Training and Education details the minimum requirements, including government certification to operate specific vehicles and purpose. To operate a transport vehicle, the operators must have:

- Dangerous Chemical Transport Vehicle Driving Licence, issued by Anqing transportation authority.
- Dangerous Chemical Transport Vehicle Driving Training, organised by Anqing transportation authority.
- Annual Training organised by Shuguang Transport.
- Three levels of entry training on safety laws, regulations, cyanide awareness, emergency response measures and protection, organised by Shuguang Transport.

Interviews with drivers and a review of training records and delivery records confirmed that drivers had received the designated training and held current driver's licences.

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.

Shuguang Transport takes responsibility once the container has been loaded, checked and sealed. Shuguang Transport's training focuses on managing shipment to prevent release and subsequent exposure.

Shuguang Transport develops and implements an annual training plan that provides monthly topics covering elements of their management system on a rotational basis. The content of these sessions includes information and instruction on driving risks, transportation of dangerous goods, and cyanide transportation route assessment and controls.

A review of training attendance records, training files and interviews with drivers confirmed that training is provided.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid cyanide.

### 3.1.3 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

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

Shuguang Transport only uses equipment designed and maintained to operate within the loads it will be handling.

Shuguang Transport has details of each vehicle combination (prime mover and trailer) including the type, registration, load bearing capacity. Values on the maximum load are provided by the manufacturer and verified through the vehicle certification process. Each vehicle has been established with individual file which mainly include shop instructions, certificates and maintenance records.

Load sizes for solid cyanide are 9.9 and 33.4 tonnes for solid.

Pre-departure Vehicle Inspection Records including:

- Vehicle number
- Mechanical parameters (brakes, types, lights, alarm, steering, transmission, chassis, fire extinguishers, antistatic, signs, power cut, battery, Beidou System, wipers etc.)
- Latest Emergency Response Plan
- Emergency response equipment (MSDS, antidotes, chemical preventive suits, full-face masks, driver physical conditions)
- Driver and escort's signature

Three Parties Inspection Records including:

- Package, labels
- Seals series number
- Actual loading versus maximum loading capacities
- Vehicle Certificates & License
- Drivers' Certificates & License
- Road Transportation Permissions for Highly Toxic Chemicals
- Road Transport Bill of Dangerous Goods
- Inspector signature

Management team will conduct Randomly Vehicle Inspection after Pre-departure Vehicle Inspection by drivers to check the consistence with the results. Special Vehicle Inspection and Comprehensive Inspection will be conducted to check the mechanical parameters and emergency response equipment of the vehicles.

There is a Level II maintenance conducted by a licensed third party and an Annual Function Verification for vehicles transporting dangerous goods. A quality warranty certificate is issued to each individual vehicle. Before departure, there are two rounds of inspection conducted by drivers, escorts, safety department, and security of producers.

Shuguang Transport has established procedures to verify the adequacy of the equipment for the load it must bear.

Management Rule of Overloading Prevention, Shift Prevention, Loading and Unloading includes compliance with annual inspection process for vehicle certification for the transport of dangerous goods issued by the local government. Part of the inspection process is to confirm vehicles are meeting manufacturer's specifications for load bearing.

Signs of stress or overloading have been included in the Annual Function Verification Records of Vehicles by Third Party. If any deficiencies identified, the vehicle won't be provided with Vehicle Certificates or Licence.

Inspection records denote the load bearing capacity and actual load. A review of Delivery Receipts confirmed shipments are within the load capacity of the vehicles.

There are procedures in place to prevent overloading of the transport vehicle being used for handling cyanide.

The pre-departure checks compare design capacity with actual load together with other required items and recorded in the inspection logbook. A review of the completed logbook confirms that loads were within the capacity of the vehicles.

There are two types of vehicles use for transport of cyanide, ridged flatbed trucks for the transport of small consignments (9.9 tonnes) of solid cyanide. Otherwise, prime movers and trailers (33.4 tons) are used for consignments of solid. Shuguang Transport has different containers sizes, but the maximum load for a single container and truck does not exceed vehicle capability. Shuguang Transport operate with a single container load per vehicle.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid cyanide.

### 3.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

☒ **in full compliance with**

**The operation is** ☐ in substantial compliance with **Transport Practice 1.4**

☐ not in compliance with

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

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

The Anhui Anqing Shuguang Chemical Company Co., Ltd. is responsible for the packaging and labelling of the cyanide product various manners:

- Solid product into plastic bags and then into metal barrels which are locked and sealed (50 kg). These are package and locked in a shipping container or lockable vehicle hold.
- Solid product into plastic bags and then into wooden crates which a nailed and strapped to from an intermediate bulk container (IBC) (1 tonne). These are then packaged and locked in a shipping container.
- Solid product into plastic bags and then into metal crates timber intermediate bulk container (IBC) (1.1 tonne). These are then packaged and locked in a shipping container.

Once the product packed in the bulk container, the transporter takes over. There are procedures in place to regularly check the integrity of packaging during transport and report damage or spillage. Single use seals are placed on the door and checked periodically throughout transportation process. Unique serial numbers are recorded on the inspection sheets. Delivery receipts indicate that seal was intact at point of delivery.

Placards and signage used to identify the shipment as cyanide meet local and international standards.

Diamonds placed at front and rear of the vehicle identify load as cyanide and the containers also have labelling that identifies the contents of the container. An inspection of the vehicles and interviews with drivers confirmed that placarding is used.

Shuguang Transport has implemented a safety programme for cyanide transport that includes:

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

Vehicle inspections prior to each departure are undertaken by the driver and escorts. Inspections includes mechanical roadworthiness and particular items. The vehicle coordination will verify the inspection results. After loading, the driver, escorts, security and warehouse of production plant will inspect again prior to each departure/shipment.

b) *A preventative maintenance program?*

Return Vehicle Inspection will be conducted after the vehicles returned from transportation to check the maintenance requirement. Maintenance records indicate routine basic maintenance is regularly performed. In addition to the internal preventative maintenance plan there is a 90-day third party maintenance and annual function verification with certificate for government compliance purposes.

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

There are daily driving limits applied depending on the distance travelled with increasing frequency/duration of breaks with increased distance. Each vehicle has two drivers to allow for rest and driving shifts, and the vehicle must be parked up between 0:00 am and 6:00 am. The driving times is monitored via the Beidou GPS system on Site, which provides real-time monitoring. In practice, for the current routes the hours driven are well below the limits set.

d) *Procedures to prevent loads from shifting?*

Solid cyanide product is packaged by the manufacturer into metal drums or IBCs which are in turn loaded into sea container. The sea containers are sealed and secured to vehicles by twist locks.

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

Procedure SGGY/Z-11-2023 provides the measures for modifying or suspending if conditions such as severe weather or civil unrest are encountered. The procedure outlines the actions to take and who must be contacted.

f) *A drug abuse prevention program?*

Provisions on control and management during cyanide transportation, which specifies that drivers and escorts involved in cyanide transport must not take alcohol or drugs that could affect safe driving, including hypnotic drugs affecting the nervous system, nausea and vomiting drugs, allergy drugs, analgesic drugs, stimulants, anti-hypertensive drugs and epilepsy drugs. The drivers are observed by the coordinator to assess fitness for duty.

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 records were sampled from the audit period and found to be complete.

h) *Are placards or other signage used to identify the shipment as cyanide, as required by local regulations or international standards?*

Diamonds placed at front and rear of the vehicle identify load as cyanide and the containers also have labelling that identifies the contents of the container. An inspection of the vehicles and interviews with drivers confirmed that placarding is used.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road

transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid cyanide.

### 3.1.5 Transport Practice 1.5

Follow international standards for transportation of cyanide by sea.

☒ **in full compliance with**

**The operation 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 is NOT APPLICABLE to Shuguang Transport.

Shuguang Transport does not intend to transport consignments of cyanide by sea 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**

**The operation is** ☐ in substantial compliance with **Transport Practice 1.6**

☐ not in compliance with

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

Shuguang Transport vehicles have the means to communicate with the transport company, the mining operation, the cyanide producer and emergency responders.

A range of communication systems are available and the management system defines the methods of communication. All vehicles carry the emergency response plan which includes phone numbers for hospitals, external emergency responders on the transport route as well as internal emergency contacts.

The primary means of communication between vehicles and the office is via mobile phone. Beidou GPS system is used to track progress of the transportation throughout the journey. There is also an emergency button in each driver's cab which is connected to the Bei GPS System. In the event of any emergency, the driver can press the button directly, the employee in the control room of Beidou GPS System will contact to initiate emergency response.

The escorts will contact the transport coordinator in the event of an emergency and the coordinator will handle communication with the client (mine) and supplier/producer.
There is a 24-hour manned contact centre that the drivers can contact to initiate emergency response. The contact details for local police and fire authority are also available for the drivers.

Shuguang Transport does periodically test communication equipment to ensure it functions properly. Checks are completed prior to dispatch as part of part of pre-departure inspections. Mobile (cell) phones are checked daily and the Beidou GPS tracking system on a group of trucks are randomly checked to confirm the tracking system is working. Mobile phone numbers are recorded on a register of contacts.
A test has been conducted for Beidou GPS System by Transportation Communication Information Engineering Quality Testing Center in 2021, which states the functions properly.

Shuguang Transport has assessed blackspots along its transport routes. There is good mobile coverage along current transport routes without blackouts. As interviewed with the drivers, no communication blackout areas along transport routes.

Shuguang Transport has systems and procedures to track the progress of cyanide shipments.

There are Beidou GPS tracking systems installed on the vehicles, the Beidou system is linked to the province government tracking system and Shuguang Transport has its own tracking system that provides information on the vehicles performance including speed and fuel consumption.

The position the vehicles is tracked in real time and the transport coordinator also makes daily contact with the escorts.

Shuguang Transport has implemented inventory controls to prevent the loss of cyanide during shipment. Solid cyanide vehicle dispatch records list provide a register of cyanide delivered, the amount and client, scheduled and actual delivery. This register is based on the completed delivery sheets.

Each vehicle carries a delivery confirmation docket that incudes date of vehicle, cargo, weight, unique seal number, signature of receiver (on arrival), sales and coordinator (on dispatch). Seals are applied to shipping container with unique serial numbers.

Shuguang Transport has procedures for Beidou GPS tracking and checking of physical security (seals) on the route to provide inventory control.

Shipping records indicating the amount of cyanide in transit and Material 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 MSDS booklet held within the cabin of each vehicle.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid cyanide.

## 3.2 Principle 2 | INTERIM STORAGE

**Design, construct and operate cyanide interim storage sites to prevent releases and exposures.**

### 3.2.1 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

**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 Shuguang Transport.

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

## 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** | |
| **The operation is** | ☐ in substantial compliance with | **Transport Practice 3.1** |
| | ☐ not in compliance with | |

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

The transporter has an Emergency Response Plan (ERP).

Emergency Response Plan for Solid Cyanide Transportation, SGGY/Z-20-2022, includes the following information:

- Introduction
- Hazard and Risk Analysis
- Emergency Organization and Responsibility
- Emergency Protection System
- Accident Prevention and Reporting
- On-site Treatment Measures for Accidental Cyanide Spill
- Emergency Termination
- Accident Communication
- Emergency Support
- Emergency Security
- Emergency Response Capacity Assessment
- Emergency Mock Drills and update
- Rewards and Accountability
- Attachments (Emergency command system diagram, accident report flow chart, accident emergency treatment communicate information)

The ERP specifies the actions required by the Shuguang Transport personnel and external emergency responders in the event that an emergency occurs. A copy of the ERP is kept in each vehicle that is used to transport cyanide.

The Emergency Response Plans (ERPs) are appropriate for the transportation route, physical and chemical form of the cyanide, method of transportation (Vehicle transportation), transport infrastructure and Shuguang Transport does not have an interim storage facility.

Disposal Plan for Solid Cyanide Transportation Accidents includes details on the actions to be taken in the event of:

- Vehicle breakdown or traffic accident;
- Spill on parking lots;
- Spill in mountainous areas;
- Spill to river;

- Spill on the highways, road, freight station, bridge, port, tunnel and storage areas;
- Extreme weather accident;
- Riot and thievery incidents;
- Soil remediation process;
- Cyanide poisoning medical treatment;
- Fire disaster.

The ERPs detail the emergency numbers for Police, Fire Authority and Ambulance. The ERPs also include contact details for the hospitals along the route. The ERP response actions are based on the scenarios developed from the hazards identified through the route assessment process.

The requirement was verified through discussion with the Environment, Health and Safety (EHS) Manager and review of the ERP area of application and document review.

The Disposal Plan for Solid Cyanide Transportation Accidents does include descriptions of response action for the anticipated emergency situations.

The Disposal Plan for Solid Cyanide Transportation Accidents details the response to a solid release and details the actions of the driver and escort at the scene and the emergency response team depending, on the scale of the incident.

The Emergency Response Plan for Solid Cyanide Transportation does identify the roles of outside responders including Transport Police, Transportation Administration Authority, Fire Authority, Safety Supervision and Management Authority, Environmental Authority, and medical services. In the event of an incident the driver's first duty is to contact emergency services. The roles of the emergency services are detailed as follows:

- Transport Police are responsible for keeping the public away from the incident scene and traffic control.
- Transportation Administration Authorities are responsible for rescue.
- The Fire Authority is responsible for rescue, clearing the scene and cleaning up spills. The Shuguang emergency response team would work with the Fire Authority in cleaning up cyanide.
- Safety Supervision and Management Authority is responsible for coordinate rescue, supervise the implementation of emergency rescue measures, participate in accident investigation and handling.
- Environmental Authority is responsible for control the accident site, prevent pollution from expanding, track the dynamic situation of pollution, and put forward suggestions for environmental restoration.
- Local hospitals and ambulance are responsible for treating cyanide exposure at the scene and in hospital.

If any accident occurs involved cyanide leakage or exposure during transportation, Shuguang Transport will coordinate the drivers and escorts near the area to assist on the emergency response. And the Shuguang Transport Emergency Team will travel to the site immediately for further handling on the accident.

### 3.3.2 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

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

Shuguang Transport does provide initial and refresher emergency response training of appropriate personnel. Training is provided on a monthly basis and topics include:

- Driver briefing on cyanide transport controls
- Regulations on dangerous chemical transport
- Safety management system
- Duties and operations procedures
- Specification dangerous chemicals and personal protective equipment.
- Seasonal driving risks
- Firefighting knowledges
- Medical rescue knowledges (poisoning, chemical burnt, wound, heatstroke)
- Vehicles maintenance

A review of driver training files and the annual training plan confirmed that drivers received training in emergency response. Interviews with drivers confirmed that they have been trained in the emergency response procedures and were aware of the hazards posed by cyanide.

In addition to the transport company resources, the Shuguang Emergency Response Team that are part of parent company and production facility are available to assist. The production facility (Anhui Anqing Shuguang Chemical Co., Ltd.) is certified under the Code.

Shuguang Transport does provide descriptions of the specific emergency response duties and responsibilities of personnel. The duties of the two drivers includes:

- Calling the emergency services
- Clearing the public from the scene
- Contacting Shuguang Transport's control centre
- Administering first aid
- Assisting emergency services
- Responding, containing and cleaning up small scale spills (Level III incidents)

The emergency response team (ERT) have been deployed and will be on Site to assist emergency services with any incident. The plan outlines the responsibilities of the ERT, and the government will be involved.

The emergency contact centre is responsible for contacting the Managing Director who assumes responsible for liaising with the government and other stakeholders.

There is a list of emergency response equipment that should be available during transport. The Emergency Response Equipment List in the ERP (within emergency rescue truck) includes:

Wiring board (100m), warning sign belt (100m), submersible pump (with conduit), anti-cyanide capsules produced by China People Army Medicine Science Institute, sodium thiosulfate, goggles, arm-long plastic glove, anti-poison mask, shovel, adsorption pad, chemical protective cloth, plastic cloth, reflective vest, etc.

Equipment prepared in solid cyanide vehicle includes anti-cyanide capsules produced by China People Army Medicine Science Institute, arm-long plastic glove, goggles, anti-poison masks, adsorption pad, sodium thiosulfate, fire extinguishers, shovel, chemical protective cloth, plastic cloth, reflective vest, etc.

A copy of the Cyanide Transport Accident and Response and Disposal Plan is kept in each vehicle that is used to transport cyanide.

Pre-inspection records (checklist) of shipping containers includes:

- Emergency response equipment
- Vehicle condition
- Inspector signature

Shuguang Transport does have available the necessary emergency response and health and safety equipment, including personal protective equipment during transport.

There are procedures to inspect emergency response equipment to assure its availability when required. The inspections are completed during the pre-departure inspection and there is a checklist that details each item of emergency response equipment that is signed by the driver and safety supervisor. A review of completed checklists and interviews with drivers confirmed that procedures were in place and being followed.

There are procedures to inspect emergency response equipment and assure its availability when required.

Shuguang Transport provides initial and periodic refresher training in emergency response procedures including implementation of the emergency response plan.

Shuguang Transport drivers attend training specifically for emergency response annually with the course run twice to capture the workforce as well as Zhenghua designated drivers. A review of driver training files confirmed that drivers attended the training and that the training was conducted annually. Interviews with drivers confirmed that they were aware of the actions to take in the event of an emergency.

In addition to the transport drivers, the emergency response team employed by Anhui Shuguang Chemical Co. Ltd who are certified under the Code are available to attend to incidents.

Shuguang does not contract other entities to conduct cyanide transportation. Shuguang Transport used to subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd (Zhenghua) for liquid cyanide road transportation from April 2019 to January 2020.

As reported by Site representative, the Site has terminated the contract with Zhenghua from February 2020 due to the risk consideration from top management of Shuguang Transport. And liquid cyanide road transportation company is contracted by the client of Anhui Anqing Shuguang Chemical Co., Ltd directly for transportation. Shuguang Transport only conducts road transportation for solid cyanide.

### 3.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

| | | |
|---|---|---|
| | ☒ **in full compliance with** | |
| **The operation is** | ☐ in substantial compliance with | **Transport Practice 3.3** |
| | ☐ not in compliance with | |

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

There are procedures and current contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities in case of an emergency. The contact information is provided within the ERPs and includes contact information for emergency services and hospitals along the route.

The drivers are responsible for contacting Shuguang control centre who will contact the Managing Director. The managing director is responsible for liaising with the government and other stakeholders including the mine and supplier. This escalation process together with contact details is provided in the ERPs. Personnel interviewed described the escalation process provided in the ERPs and contact numbers are updated during the annual route assessment process.

Systems are in place to ensure that internal and external emergency notification and reporting procedures are kept current. The ERPs are reviewed on annual basis and personnel interviewed confirmed that the contact details are checked as part of the review and updated as needed.

The operation has a procedure for notifying ICMI of any significant cyanide incident, which detailed in *Emergency Response Plan for Solid Cyanide Transportation*. In case of relevant accidents, the deputy commander of the company's emergency headquarters shall contact the ICMI contact person of the company, who will report the relevant information of ICMI accidents.

Shuguang Transport did not have any significant cyanide incidents during the full three-year audit cycle.

### 3.3.4 Transport Practice 3.4

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

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|---|---|---|
| | ☒ **in full compliance with** | |
| **The operation is** | ☐ in substantial compliance with | **Transport Practice 3.4** |
| | ☐ not in compliance with | |

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

There are procedures 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.

The ERPs detail the actions to be taken in the event of solid cyanide spill. The ERP provides that cyanide is to be collected and placed back into container or tanker and taken back to the production facility for disposal.

The ERPs describe neutralisation techniques using sodium thiosulfate for spills onto soils or ground. It provides the amount of sodium thiosulfate per metric tonne of spilt cyanide. All neutralised soil is to be excavated and taken back to the production facility for disposal.

The ERP does prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

Section 6.4.7 of the Emergency Response Plan for Solid Cyanide Transportation states “In the emergency process, sodium hypochlorite, ferrous sulfate and hydrogen peroxide are strictly prohibited to treat the water and soil contaminated by the leakage of solid sodium cyanide.”.

### 3.3.5 Transport Practice 3.5

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

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|---|---|---|
| | ☒ **in full compliance with** | |
| **The operation is** | ☐ in substantial compliance with | **Transport Practice 3.5** |
| | ☐ not in compliance with | |

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

There are provisions for periodically reviewing and evaluating the Plan’s adequacy and they are being implemented. The ERPs have been updated in 2022 and mock drills have been undertaken as planned over the three years period. The mock drill process includes a debrief process and review of what went well and opportunities to improve response.

Section 12.3 of Emergency Response Plan for Solid Cyanide Transportation requires annual review of the ERP, if any, for the applicable state and local laws, internal and/or external contact numbers, roles and responsibilities of the emergency response team, and any issues identified during the mock drills that requires updates for the ERP. The latest version of the ERPs reviewed at the time of the site visit was dated 1 September 2022.

There are provisions for periodically conducting mock emergency drills and they are implemented. The operation does conduct emergency response drills annually for both liquid and solid cyanide related scenarios for both worker exposure and environmental release. A review of mock drill reports and interviews confirmed that mock drills have been completed in accordance with commitments.

There is a procedure to evaluate the ERP's performance after its implementation and revise if necessary. The ERP details that the plan will be updated after an incident or if there is a change in process or equipment. Following the annual mock drill, a review of the ERP is undertaken and updated as required.

There have been no incidents involving cyanide transport during the audit period.

# 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.

# Signature Page

**WSP Engineering Technology (Beijing) Co. Ltd. Shanghai Branch**

Hongtao Hu
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*Director*

HH/OL

**APPENDIX A**

# IMPORTANT INFORMATION

# 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 WSP Engineering Technology (Beijing) Co. Ltd. Shanghai Branch ("WSP") subject to the important limitations and other qualifications set out below.

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

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Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed WSP 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 WSP or otherwise made available to WSP. 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 WSP when the Services were performed and this Report was prepared. WSP 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.

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