SUMMARY AUDIT REPORT

for the May 2016
International Cyanide Management Code Recertification Audit

Prepared for:

Anqing Shuguang Supply, Sales and Transportation Co., Ltd (ASSST)

Submitted to:
International Cyanide Management Institute
1400 I Street, NW, Suite 550
Washington, DC 20005, USA

FINAL
26 September 2016

Ramboll Environ Canada, Inc.
100 Park Royal, Suite 200
West Vancouver, BC, V7T 1A2
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SUMMARY AUDIT REPORT

Name of Transporter: Anqing Shuguang Supply, Sales and Transportation Co., Ltd

Name of Owner: Anqing Shuguang Supply, Sales and Transportation Co., Ltd

Name of Responsible Mr Chenglong Bao, Company Director

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Location detail and description of operation:

Anqing Shuguang Supply, Sales and Transportation Co., Ltd (ASSST) is a subsidiary company of Anhui Shuguang Chemical Group (Shuguang Group), which is responsible for transportation of sodium cyanide manufactured by Anhui Anqing Shuguang Chemical Co, Ltd (AASCC) by road to ten destinations (i.e., Erenhot, Hangzhou, Hefei, Shanghai, Kunming, Xingyi, Shenyang, Jinan, Jinjiang and Nantong) within China.

ASSST is only the transporter of cyanide and is not responsible for loading or unloading the trucks. The sodium cyanide is packed, and loaded into 40-foot shipping containers, that are always fixed to the truck trailers, and sealed by AASCC. Within each shipping container the solid cyanide is packaged in 50kg steel drums, or 380 kg or 1,000 kg intermediate bulk containers (IBC) plywood boxes; with the maximum of 26 1,000kg-IBC boxes per shipping container. The cyanide briquettes in each IBC are packed in polyethylene supersacks enclosed in plastic (bag in bag). The maximum net load packed in shipping container is approximately 26,000 kg.

Upon arriving at the destination, the driver/escort of ASSST will check the integrity of the containers and the shipping documents with the client prior to unloading. The container unloading activities are undertaken by the customer and are not the responsibility of ASSST.

For all the ten transportation routes, the roads used are predominantly concrete paved highways and limited connected concrete/asphalt paved national/provincial grade roads in Anqing City and the destination cities.

SUMMARY AUDIT REPORT

Auditors' Finding

The operation is: ■ in full compliance
in substantial compliance
not in compliance

The Anqing Shuguang Supply, Sales and Transportation Co., operation has not experienced any cyanide incidents, releases, or exposures, or any significant compliance ICMC compliance issues since the supply chain was originally certified in 2013.

Audit Company: **Ramboll Environ Canada, Inc.**
100 Park Royal, Suite 200
West Vancouver, BC V7T 1A2

Audit Team Leader and Technical Auditor: John Lambert

e-mail: Jlambert@environcorp.com

Date(s) of Audit: 4 May 2016 and 6 May 2016

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the *International Cyanide Management Institute* for Code Verification Auditors. I attest that this Detailed Audit Finding 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 Transportation Verification Protocol* and using standard and accepted practices for health, safety and environmental audits.

ASSST
Name of Transporter

Signature of Lead Auditor

26 September 2016
Date

SUMMARY AUDIT FINDINGS REPORT

1. TRANSPORT: Transport cyanide in a manner that minimizes the potential for accidents and releases.

<u>Transport Practice 1.1</u>: 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 with
- not in compliance with

Summarize the basis for this Findings/Deficiencies Identified:

ASSST is in FULL COMPLIANCE with Transport Practice 1.1 which requires the facility to select cyanide transport routes to minimize the potential for accidents and releases.

ASSST uses a risk assessment procedure to select the least hazardous route for the cyanide transportation. For the risks identified during the evaluation, countermeasures are developed and implemented for risk mitigation. Drivers are also required to report new potential risks in their driving log to assist in the evaluation of routes and the route selection process.

As part of the route selection procedure ASSST: communicates with the manufacturer; communicates with the communities along the route; and communicates with the Traffic Administrative Department (TAD) of Public Security Bureaus (PSB) at the starting location or the destination. In addition, ASSST is also required to seek feedback from other parties/organizations, including Anqing PSB, Anqing Work Safety Bureau, and Anqing Environmental Protection Agency regarding the route selection.

The Safety Department has annually re-evaluated the routes as required by their internal procedure. There have been no significant changes for the existing routes since the last ICMC audit in 2012. Procedures are also in place to re-evaluate a route and make adjustment to the route and/or mitigation measures if the driver/escort identify significant changes in the road conditions that may impact the route or bring about new risks. The Safety Department also oversee the drivers and escorts to identify the potential safety risks along the routes, stipulate appropriate risk mitigation measures and prepare for an emergency.

According to the Chinese Regulation, a permit is required to be issued by the provincial Public Security Bureau (PSB) at the destination city for the hazardous prior to each delivery. Before issuing the permit, the provincial PSB of the destination city

will inform the PSBs of the other provinces along the transportation route and collect any feedback from them. Only when all the provincial PSBs agree with the transportation route, will the permit be issued.

The use of convoys has not been considered necessary as the transportation routes are mostly along highways and pass through well-regulated and patrolled parts of China where safety and security is not a significant concern.

ASSST does not directly advise external responders, medical facilities and communities along the routes of their response roles in the event of an emergency. This is instead undertaken as part of an emergency response network established all over China in accordance with the State Public Health Emergency Response Guideline, published in January 2005. The emergency response network in China consists of the authority representative from local Environmental Protection Agency (EPA), PSB, hospitals, Work Safety Bureau (WSB) to assist with the emergency rescue. The emergency response network also has an expert database to provide prompt on-site or remote assistance during emergency incident. There is a universal emergency contact throughout China, which triggers the local response from the emergency response network to provide assistance for first-aid, fire-fighting, environmental protection, security, and etc.

<u>Transport Practice 1.2</u>: 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 with
- not in compliance with

Summarize the basis for this Findings/Deficiencies Identified:

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

ASSST use only trained, qualified and licensed operators to drive the trucks for cyanide transportation. In addition, ASSST maintains a list of drivers/escorts that includes the name, gender, mobile number, driver license number, escort license number, license expiry dates and the license number of the truck in their charge. Maintenance of this database is a regulatory requirement.

New employees undertake three levels of training prior to commencement of work. This training is conducted at the company-level, department level and group level and takes a total of nine days (three days for each level of training) to complete. At the end of the three-levels of training, a test is undertaken to assess driver

understanding and competency and the drivers must attain at least a 60% pass mark. Refresher training is conducted twice per month (10th and 25th of each month) and requires the participation of all drivers. Training records for the past three years were available for review and demonstrated adherence to the training program.

<u>Transport Practice 1.3</u>: Ensure that transport equipment is suitable for the cyanide shipment.

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

Summarize the basis for this Findings/Deficiencies Identified:

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

There has been no change in loading and unloading activities since the last verification audit. The loading of cyanide containers continues to be undertaken by AASCC (the manufacturer) and the unloading of cyanide containers by the customer at the destination. ASSST is only responsible for the on road transportation.

ASSST currently owns and maintains 44 trucks/trailers dedicated for cyanide transportation. The trucks are mostly the Jiefang Model produced by No.1 Automobile Co., Ltd., China. Each trailer comprises a 40-foot long chassis and a dedicated shipping container that is permanently mounted to the trailer via twist locks. The maximum approved loading weight for each trailer is between 33.5 and 34.7 tonnes depending on the trailer. A procedure is in place for loading and unloading to prevent overloading and shifting of loads. The net carrying capacity for each trailer is calculated and recorded. Records for each truck show that the net load capacity ranges from 21 tonnes to 26 tonnes per trailer/container. Maintenance of these records is a regulatory requirement.

Trucks maintenance comprises the following:
1. Routine documented inspections by the driver prior to departure and on completion of each shipment.
2. Quarterly inspection and maintenance provided by the Taifa Automobile Maintenance Co., Ltd (Taifa), a Class A vehicle maintenance company authorized by the Anqing Road Transportation Management Bureau;
3. Annual Inspection conducted by the entrusted inspection station of the Anqing Road Transportation Management Bureau.

Routine, quarterly and annual inspection records were reviewed for one vehicle and appeared to be complete. Adherence to the maintenance program is a regulatory required for issuance of the vehicle licence.

In addition, vehicle inspections are also undertaken prior to the departure, at rest stops during the transportation and on completion of each shipment.

<u>Transport Practice 1.4</u>: Develop and implement a safety program for transport of cyanide.

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

Summarize the basis for this Findings/Deficiencies Identified:

ASSST is in FULL COMPLIANCE with Transport Practice 1.4 requiring that the facility develop and implement a safety program for transport of cyanide.

ASSST's has maintained a safety program for cyanide transport that includes (where appropriate or applicable) the following:

a) Vehicles are inspected by the drivers and a quality inspector prior to each scheduled transport.
b) A detailed maintenance program is in place for each vehicle that includes routine maintenance, quarterly maintenance and annual authority's inspection.
c) The shipping containers are fastened to the trailers using twist-lock devices. The drivers and escort check the security of the load and twist locks prior to departure of the delivery. The driver and escort also check the security of the load at each rest stop.
d) Procedures are in place that specify the actions for drivers when weather, road condition or factors triggers the need for route change.
e) Drivers and escorts involved in the cyanide transport are not permitted to consume alcohol or drugs which have adverse impact for safe driving.

A procedure in place that requires drivers to stop and rest periodically to alleviate fatigue. The time that drivers rest is monitored and recorded on an online GPS tracking system. The procedure stipulates designated rest periods depending on the transport distance that vary from a minimum of 4 hours when the transportation distance is less than 500km to a minimum of 8 hours when the transportation distance is more than 800km. After returning from transportation trips, drivers are also required to rest no less than 24 hours after a delivery less than 2,000km and no less than 48 hours after a delivery more than 2,000km.

ASSST has procedures in place to inspect the cyanide packaging while it is being loaded by the manufacturer to ensure the integrity of the packaging; fix and stabilize the packaging in the shipping container to prevent shifting during transport; and on completion of loading to lock and seal the shipping container. The container seal is checked during transport and at the destination to ensure that it has not been broken. Procedures also require the escort to observe the unloading process to confirm that the cyanide packages were not damaged during transport.

The cyanide is transported in compliance with Chinese requirements for transport of hazardous goods which is consistent with the Global Harmonized System for classifying and labelling of chemicals (GHS). Each IBC box or drum transported is also labelled Sodium Cyanide by the manufacturer to identify the contents and provide information on safe handling and emergency response.

All records are retained.

***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 with
- not in compliance with

Not Applicable. ASSST does not transport cyanide by sea or air.

***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 with
- not in compliance with

Summarize the basis for this Findings/Deficiencies Identified:

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

Each driver/escort is equipped with a mobile phone and each truck is equipped with GPS which is tracked and monitored using an Integrated GPS online tracking system located in the ASSST control room. A pre-inspection checklist completed prior to departure includes items for the inspection for mobile phones and GPS to ensure they are carried and are operating. There are no communication blackout areas present along the transportation routes with the existing mobile phone network. The pre-departure checklist also includes checks for MSDS and the delivery sheet.

Emergency contact phone numbers are listed in the Emergency Response Plan in the event of an emergency. The phone numbers include ASSST responsible personnel and external emergency responders.

A Chain of Custody procedure is used to track cyanide during shipment and copies of the shipping records are maintained by ASSST. All IBCs are transported within the sealed shipping container of the truck. A seal is applied to the container door and the seal number is recorded on the delivery sheet. The seal is checked by the driver/escort during each rest break along the route to confirm that it remains intact throughout the journey. On arrival at the customer site, the recipient signs the delivery sheet to confirm that the consignment was received in good condition and intact. The recipient also records the seal number and checks that the seal number matches that recorded at the manufacturer's site when the container was loaded.

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

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

Not applicable. ASSST does not operate a trans-shipping depot or interim storage facility.

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

<u>Transport Practice 3.1</u>: Prepare detailed emergency response plans for potential cyanide releases.

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

Summarize the basis for this Findings/Deficiencies Identified:

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

ASSST has developed an Emergency Response Plan (ERP) and the main content of the ERP includes the following:

1. Introduction
2. Hazard and Risk Analysis
3. Emergency Organization and Responsibility
4. Emergency Protection System
5. Accident Prevention and Reporting
6. On-site Treatment Measures for Accidental Cyanide Spill
7. Emergency Termination
8. Accident Communication
9. Emergency Support
10. Emergency Security
11. Emergency Response Capacity Assessment
12. Emergency Mock Drills
13. Rewards and Accountability

The ERP was developed specifically for the transport of cyanide by road as no interim storage operations are conducted by ASSST. A copy of the ERP is carried in each truck during transportation. The Chinese the state emergency response network (as discussed in Transport Practice 1.1) provides emergency response services in the event of an accident during transportation.

ASSST has considered the physical and chemical form of cyanide during the development of the ERP. The sodium cyanide is packed in polyethylene supersacks enclosed in plastic and then stored in IBCs (e.g., 50kg steel drums, 380 kg or 1,000 kg plywood containers). These are transported in sealed shipping containers. The ERP is aligned with this method of transportation of cyanide.

The ERP considers three spills scenarios with defined health, environmental and economical thresholds:

a) Significant Spill;
b) General Spill; and
c) Minor Spill

ASSST has also implemented a Emergency Response Program that provides guidance on response actions and spill treatment principles for anticipated emergency situations including: vehicle breakdown or traffic accident; spill on parking lots; spill in mountainous areas; spill to river; spill on the road, bridge, port and storage areas; spill in a tunnel; riot incidents; soil remediation; and/or cyanide poisoning. The ERP provides detailed response actions for a cyanide spill and includes both the roles and responsibilities of ASSST's personnel and external responders.

The ERP includes procedures for neutralizing cyanide residue using sodium thiosulfate solution. The plan prohibits the use of neutralizing chemicals in the vicinity of a water body.

Appendix II of the ERP provides an incident reporting flowchart in an event of emergency. The driver should first call 110 (for emergency) and or 122 (for traffic accident), and notify the Management Director of ASSST. The Managing Director is responsible for activating the ERP as necessary and, if required, to report to the government. If the ERP is to be activated, the Managing Director would notify the Emergency Response Team which coordinates the subsidiary response teams (e.g., rescue team, logistic supply team, expert team, etc) of ASSST including the emergency security group, emergency technology expert, emergency rescue team and the cyanide manufacturer.

<u>Transport Practice 3.2</u>: Designate appropriate response personnel and commit necessary resource, for emergency response.

The operation is

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

Summarize the basis for this Findings/Deficiencies Identified:

ASSST is in FULL COMPLIANCE with Transport Practice 3.2 requiring it designates appropriate response personnel and commit necessary resources for emergency response.

All personnel involved in the handling and transport of cyanide are required to complete a nine-day three level training at the commencement of employment and also participate in the regular refresher training twice a month. The ERP and the Emergency Response Program are important topics in these training and refresher training programs to ensure all the employees are aware of their roles and responsibilities during the emergency.

All the drivers are also required to participate in emergency mock drills that are conducted at least annually. The drill scenarios for the 2013 through 2015 mock drills comprised a spill on a concrete paved roadway (Wanjiang Avenue of Yingjiang District, Anqing City). External parties (e.g., fire brigade, hospitals, EPA, police, and etc) participated in the drills. Subsequent to the field component of this verification audit, a mock drill was undertaken on 24 June 2016. This drill involved a cyanide spill on a wet paved road.

The ERP lists all the emergency response equipment carried on each truck. During the site audit, the antidote (amylnitrite) on one truck was found to be expired and also the antidote was not being stored within the temperature range recommended by the manufacturer (i.e., below 20° C). Subsequent to the field component of the verification audit ASSST purchased cooler bags for each truck in which to store the antidote within the required temperature during cyanide transport. ASSST also replaced the expired amylnitrite and added a requirement to the pre-departure inspection checklist to check that the amlynitrite is within its expiry date. As evidence of completion, ASSST provided a purchase receipt for purchase of 50 cooler bags, photographs of the bags and of refrigerator dedicated for amlynitrite storage when not transport.

***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 with
- not in compliance with

Summarize the basis for this Findings/Deficiencies Identified:

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

The ERP provides an incident reporting flowchart in an event of emergency. The driver should first call the public emergency numbers 110 (for emergency) and or 122 (for traffic accident), and notify the Managing Director of ASSST. The Managing Director is responsible for activating the ERP as necessary and, if required, to report to the government. If the ERP is to be activated, the Managing Director notifies the Emergency Response Team which coordinates the response.

The ERP requires ASSST to undertake annual assessment to the ERP to reflect changes, if any, in applicable state and local laws, internal and external contact numbers, roles and responsibilities of the emergency response team, and/or any issues identified during the mock drill that requires updates for the ERP.

According to the site personnel, there had not been any significant changes in the past 3 years to warrant modification to the ERP. Subsequent to the field component of the audit, the ERP was updated to incorporate response instruction in the event of a spill on wet ground. The current version of the ERP is dated 20 May 2016.

***Transport Practice 3.4*: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.**

ASSST — Name of Transporter
Signature of Lead Auditor
26 September 2016 — Date

The operation is

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

Summarize the basis for this Findings/Deficiencies Identified:

ASSST is in FULL COMPLIANCE with Transport Practice 3.4 requiring that it develops procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

The ERP prohibits the use of sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat the cyanide spill or cyanide contaminated water and soil to prevent secondary pollution of downstream waters.

ASSST has 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 Emergency Response Program details the treatment and remediation methods in the event of a cyanide spill. The program states that for minor spills (less than 50kg), the areas of spill are cleaned and neutralized with sodium thiosulphate. 10kg of sodium thiosulphate is carried on each truck as part of the emergency response kit.

Based on the detailed review of the Emergency Response Program, the program did not address the potential for generation of HCN if a solid cyanide spill occurred onto wet road/soil conditions and the precautions that the driver and emergency response personnel need to take if such an event occurred. The auditors recommended that ASSST review their Emergency Response Program to address this potential situation. Subsequent to the field component of the audit, ASSST revised the Emergency Response Program to include instruction in the event of a spill on a wet road during a rainy or snowy day. In such an event the driver/escort are instructed to call the police, wear PPE, move upwind of the spill and inform bystanders to keep clear. On 24 June 2016 a mock drill was completed that involved a cyanide release onto wet ground. ASSST provided the auditor with a copy of the updated Emergency Response Program and a record of the mock drill plan and photograph taken of the mock drill.

***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 with
- not in compliance with

Summarize the basis for this Findings/Deficiencies Identified:

ASSST — Name of Transporter

Signature of Lead Auditor

26 September 2016 — Date

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

ERP states that ASSST will annually review the ERP and update as needed to reflect changes, if any, in applicable state and local laws, internal and external contact numbers, roles and responsibilities of the emergency response team, and any issues identified during a mock drill. The ERP also requires ASSST to conduct an assessment after an emergency accident which activated the ERP to check whether the ERP needs to be modified based of lessons learned.

ASSST		26 September 2016
Name of Transporter	Signature of Lead Auditor	Date