

***INTERNATIONAL CYANIDE  
MANAGEMENT INSTITUTE***

***Cyanide Transportation  
Summary Audit Report***

***For the  
International Cyanide Management Code***

**SAM IK LOGISTICS Co., Ltd.**

**03 October 2013**

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon

03 October 2013

Name of Transporter

Lead Auditor Signature  
Page 1 / 16

Date

## Summary Audit Report

**Name of Cyanide Transportation Facility :** SAM IK LOGISTICS Co., Ltd.  
**Name of Facility Owner :** SAM IK LOGISTICS Co., Ltd.  
**Name of Facility Operator :** Yoon Seok Oh / General Manager of Administration Team  
**Name of Responsible Manager :** Yoon Seok Oh / General Manager of Administration Team  
**Address :** 9F, Goryeo Daeyungak Center, 25-5, 1-ga, Chungmu-ro, Chung-ku,  
**State/Province :** Seoul 100-706 **Country :** South Korea  
**Telephone :** 82-2-3708-7000 **Fax :** 82-2-3708-7091 **E-Mail :** ysoh@samik21.com  
**Website :** www.samik21.com

### Location detail and description of operation:

The SAM IK LOGISTICS Co., Ltd. is transportation service provider contracted with sodium cyanide manufacture TongSuh Petrochemical Co., Ltd. Ulsan Plant. The sodium cyanide is produced by TongSuh Petrochemical Co., Ltd. Ulsan Plant and transported to Busan Port and Busan New Port in Korea by SAM IK LOGISTICS Co., Ltd. The SAM IK LOGISTICS Co., Ltd. transports the sodium cyanide from TongSuh Petrochemical Co., Ltd. Ulsan Plant to Busan Port and Busan New Port by roadway transportation and railway transportation.

The SAM IK LOGISTICS Co., Ltd. was initially ICMC certified in December 2010.

Owing to almost 3 years since initial certification, recertification audit was conducted on 05, 06, 17 and 18 September and 03 October 2013.

During this recertification audit, auditor team could confirm the followings;

**“This operation has not experienced compliance problems during the previous three-year audit cycle.”**

In the year 2010 when they was initially ICMC certified, only Busan Port was operated. And, in the year 2013, the Busan New Port was constructed and operated. Therefore, the sodium cyanide can be exported through existing Busan Port or Busan New Port in Korea. The distance from TongSuh Petrochemical Co., Ltd. to Busan Port is about 60 Km ,and to Busan New Port is about 80 Km. The followings show brief transportation routes.

#### (1) Main transportation route 1

- TongSuh Petrochemical Co., Ltd. Ulsan Plant -> SAM IK LOGISTICS Co., Ltd. Ulsan Center :  
By roadway transportation
- SAM IK LOGISTICS Co. Ltd Ulsan Center -> Busan Station : By rail transportation
- Busan Station -> Busan Port : By roadway transportation

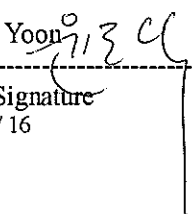
#### (2) Main transportation route 2

- TongSuh Petrochemical Co., Ltd. Ulsan Plant -> SAM IK LOGISTICS Co. Ltd Ulsan Center :  
By roadway transportation
- SAM IK LOGISTICS Co. Ltd Ulsan Center -> Busan New Port Rail Center : By rail transportation
- Busan New Port Rail Center -> Busan New Port : By roadway transportation

#### (3) Alternative transportation route

- TongSuh Petrochemical Co., Ltd. Ulsan Plant -> Busan Port and Busan New Port : By roadway transportation

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

***Auditor's Findings***

**This operation is**

**X in full compliance**

in substantial compliance \*(see below) with the International Cyanide Management Code.  
not in compliance

The operation has maintained full compliance with the International Cyanide Management Code throughout the previous three-year audit cycle.

Audit Company : DS' GMP

Audit Team Leader : Mr. Do-Sik, Yoon

E-mail : dosiky@naver.com

Date(s) of Audit : 05, 06, 17 and 18 September 2013, and 03 October 2013

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.

SAM IK LOGISTICS Co., Ltd.

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Name of Transporter

Do Sik, Yoon

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Lead Auditor Signature

03 October, 2013

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Date

SAM IK LOGISTICS Co., Ltd.

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Name of Transporter

Do Sik, Yoon

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Lead Auditor Signature

03 October 2013

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Date

## Summary Audit Report

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

*Transport Practice 1.1: Select cyanide transport routes to minimize the potential for accidents and releases.*

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

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

The SAM IK LOGISTICS Co., Ltd. prepared the Cyanide Transportation Operational Manual SCTM-01 that defined the processes of route selection for sodium cyanide transportation. According to the manual, they surveyed the possible routes from the sodium cyanide manufacture to their final destination, and then selected the sodium cyanide transportation routes considering the possibility of potential accident and release including detail check items as population density, infrastructure, pitch, grade, prevalence & proximity of water and fog. In the year 2013, the Busan New Port was constructed and operated. Therefore, the sodium cyanide can be exported through existing Busan Port and/or Busan New Port in Korea. They also surveyed the new route in May 2013. The minimization of possibility for potential accidents and release was key item in selection of sodium cyanide transportation route.

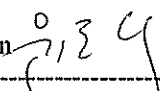
The SAM IK LOGISTICS Co., Ltd. appropriately established risk identification and evaluation procedure in Cyanide Transportation Operational Manual SCTM-01 that covered risk identification and risk evaluation, and they implemented the risk identification and evaluation again for their two main transportation routes and alternative transportation route in May 2013.

The SAM IK LOGISTICS Co., Ltd. prepared control measure and applied to those high risk items such as release to road, land and surface water by truck capsized during road transportation and leakage to land during handling by fork lifter in SAM IK LOGISTICS Co., Ltd.'s Ulsan Center, Busan Station and Busan New Port rail Center.

The SAM IK LOGISTICS Co., Ltd. should reevaluate the transportation routes on an annual basis. The periodic re-evaluation for existing two transportation routes and evaluation for new transportation route were implemented in May 2013. They also defined and maintained the process for getting feedback on route condition from driver, reviewing the information and identification of additional risks. They should prepare additional control measure if any additional risk identified. There was no special information from driver that can influence the identified risks and control measures.

The SAM IK LOGISTICS Co., Ltd. appropriately documented the control measure in Cyanide Transportation Manual SCTM-01 safety principle and emergency preparedness related to road transportation and interim storage in which such items defined as driving speed, prevention of over loading, vehicle inspection etc., fork lifter handling and maintenance, emergency preparedness for release to road, land and water surface. And also the manual, principle and emergency preparedness were communicated and trained to employees, drivers and contractor as rail operational company.

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

Since the year 2010 until as of Sept., 2013, SAM IK LOGISTICS Co., Ltd. received some comments from below stakeholders and relevant government bodies and the comments from stakeholders and legal requirements were appropriately reviewed and reflected to route selection and development of control measures for high risk items as below;

- Comments from TongSuh Petrochemical Co., Ltd.
- Samsung C & T Corporation and Hyosung Corporation
- Korea health and safety agency & Fire fighting agency

The SAM IK LOGISTICS Co., Ltd. reviewed the overall detail courses for the two main transportation routes and alternative transportation route. They finally decided that convoys, escorts or additional measures are unnecessary.

According to the Cyanide Transportation Operation Manual SCTM-01, SAM IK LOGISTICS Co., Ltd. uses escort or convey for special cases as social disturbance, strike by driver and if requested by government. Since the year 2010 until now, there was no special case needed the escort or convey in Korea.

The SAM IK LOGISTICS Co., Ltd. established emergency preparedness for sodium cyanide release and human exposure. In the emergency preparedness, role and mutual aid with export consigners, sodium cyanide manufacture, rail operational company, ports, safety agency, police, fire fighting agency, hospital etc. were defined. They communicated and advised the emergency preparedness to relevant bodies in an effective way.

The SAM IK LOGISTICS Co., Ltd. does not subcontract any of sodium cyanide roadway transportation to logistic company. The railroad transportation is implemented by Korea Rail Operation Company. SAM IK LOGISTICS Co., Ltd. checked the railroad transportation route from Ulsan Center to Busan Station and Busan New Port Rail Center and found that Korea Rail Operation Company complied with "Railroad transportation safety act". And then SAM IK LOGISTICS Co., Ltd. made contract agreement with the Korea Rail Operation Company for sodium cyanide transportation. In the contract agreement, the responsibility of Korea Rail Operation Company to comply with railroad transportation safety act and safety manual was defined. And also procedure and emergency preparedness communicated from SAM IK LOGISTICS Co., Ltd. to Korea Rail Operation Company.

*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.*

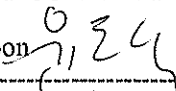
**The operation is** **X in full compliance with**  
in substantial compliance **with Transport Practice 1.2**  
not in compliance with

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

Since the year 2010 until now, SAM IK LOGISTICS Co., Ltd. uses only licensed drivers according to "Road traffic safety act". The drivers shall have license admitted the operation and driving for truck and trailer. And also they use only licensed operators of fork lifter according to "Heavy equipment control act" in Ulsan Center, Busan Station and Busan New Port Rail Center.

According to Cyanide Transportation Operational Manual SCTM-01 and "Industrial Safety and

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

SAM IK LOGISTICS Co., Ltd.

Health Act”, the truck and trailer drivers and fork lifter operators received minimum 16 hours of related training before undertaking the handling and transportation work for dangerous substance as chemicals, gas and radioactive material. So SAM IK LOGISTICS Co., Ltd. has trained their new drivers and operators for sodium cyanide safety issues as emergency preparedness, wearing of personnel protective equipment and Cyanide Transportation Operational Manual for appropriate hours. SAM IK LOGISTICS Co., Ltd. registered driver and operator name, license number, effective date of license and training record.

The SAM IK LOGISTICS Co., Ltd. trained their new drivers and operators for sodium cyanide safety issues as emergency preparedness, wearing of personnel protective equipment and Cyanide Transportation Operational Manual for appropriate hours. And also SAM IK LOGISTICS Co., Ltd. provided monthly training to their drivers and operators for safety issues related to transportation and sodium cyanide handling. For railroad transportation, SAM IK LOGISTICS Co., Ltd. checked the railroad transportation route from Ulsan Center to Busan Station and Busan New Port Rail Center. And they found that Korea Rail Operation Company used licensed train drivers and implemented safety training.

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

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

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

Since the year 2010, SAM IK LOGISTICS Co., Ltd. has used trucks and trailers originally designed for road transportation. The maximum load bearing capacity, “20 tons” are defined in Cyanide Transportation Operational Manual SCTM-01 with the reflection of requirements from “Road traffic safety act”. The maximum capacities of fork lifters used in Ulsan Center, Busan Station and Busan New Port Rail Center were defined in manual and marked in each fork lifters according to instruction from fork lifter manufacture.

The SAM IK LOGISTICS Co., Ltd. has an appropriate preventive maintenance schedule for trucks and trailers and fork lifters. The maintenance period, inspection item, last and next inspection dates were defined in maintenance schedule. They have implemented maintenance as scheduled and results including inspection results, part and oil exchange results were retained in maintenance center and in each truck and trailer and fork lifter. During the maintenance, the load bearing capacity and adequacy considering the maximum weight of transportation were checked and repair results were recorded.

The SAM IK LOGISTICS Co., Ltd. defined the process of verification in Cyanide Transportation Operational Manual SCTM-01. According to the manual, the adequacy of truck and trailer and fork lifter for the road those must bear have been checked during preventive maintenance implemented every 6 month. The tire air pressure, tire abrasion, tire exchange date and running kilometer and distortion of frame also checked to identify sign of stress and overloading. The inspection and maintenance results were recorded in each equipment history card retained in maintenance center. According to the maintenance records, until now there is no special case signing the stress and overloading identified.

The overloading is prohibited in Korea by “Road traffic safety act.” So the truck and trailer cannot transport more than 20 tons. The capacity of fork lifter is more than the weight of one container. According to “Road traffic safety act” and Cyanide Transportation Operational Manual

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoo 

03 October 2013

Name of Transporter

Lead Auditor Signature  
Page 6 / 16

Date

SAM IK LOGISTICS Co., Ltd.

SCTM-01, the maximum weight for road transportation is 20 tons. To comply with manual and safety act, the SAM IK LOGISTICS Co., Ltd. has transported only one container in which 16 ton of sodium cyanide can be fully inserted.

The sodium cyanide manufacturer, "TongSuh Petrochemical Co., Ltd" ordered only one container transported for each transportation order. SAM IK LOGISTICS Co., Ltd. was prevented automatically the overloading for sodium cyanide transportation. The railroad transportation from Ulsan Center to Busan Station and Busan New Port Rail Center was operated by Korea Rail Operation Company. As one of government subsidiary company, the Korea Rail Operation Company complied with "Railroad transportation safety act" in which prevention of overloading and control of train was defined.

For railroad transportation, since the year 2010, the SAM IK LOGISTIC Co., Ltd. has annually checked the railroad transportation route from Ulsan Center to Busan Station and Busan New Port Rail Center. They found that Korea Rail Operation Company complied with "Railroad transportation safety act" in which prevention of overloading and control of train were defined.

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

<b>The operation is</b>	<b>X in full compliance with</b>	
	in substantial compliance	<b>with Transport Practice 1.4</b>
	not in compliance with	

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

In the Cyanide Transportation Operational Manual SCTM-01, SAM IK LOGISTIC Co., Ltd. defined the handling and inspection method for the container of sodium cyanide. The loading of sodium cyanide to container was controlled and implemented by TongSuh Petrochemical Co., Ltd. in Ulsan Plant. Loaded to container, the amount and appearance were checked by TongSuh Petrochemical Co., Ltd. and driver. The containers were locked by driver. The amount of sodium cyanide and appearance inspection results were recorded in dispatch order sheet communicated from TongSuh Petrochemical Co., Ltd to driver. The process to maintain the integrity of producer's packaging was defined and implemented by truck and trailer drivers and fork lifter operators appropriately. Their client, TongSuh Petrochemical Co., Ltd. has used sodium cyanide containers on which the mark of toxic chemical presence were attached and easily identified during transportation. According to "Industrial safety and health act", the marking of toxic chemical presence and maintaining of MSDS were required during transportation.

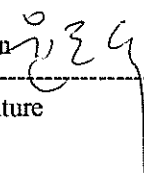
SAM IK LOGISTIC Co., Ltd. has transported the sodium cyanide container marked the toxic chemical presence by TongSuh Petrochemical Co., Ltd. maintaining MSDS by drivers.

Those marking of toxic chemical presence and maintaining MSDS complied with Korea legal requirement and Cyanide Transportation Operational Manual SCTM-01.

SAM IK LOGISTIC Co., Ltd. defined and implemented the safety processes related to sodium cyanide handling and transportation in Cyanide Transportation Operational Manual SCTM-01 covering the followings;

- Truck and trailer inspection prior to departure
- Preventive maintenance schedule was prepared for trucks and trailers and fork lifters.
- The maximum working time of truck and trailer driver and fork lifter operator
- Process to prevent load from shifting
- The process of suspension and modification of sodium cyanide transportation
- A drug abuse is prevented according to Cyanide Transportation Operational Manual

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

■ The SAM IK LOGISTICS Co., Ltd. defined the retention period for records originated from inspection, preventive maintenance, transportation log sheet, dispatch order sheet etc. For railroad transportation, in May 2013 year, SAM IK LOGISTIC Co., Ltd. has checked the railroad transportation route from Ulsan Center to Busan Station and Busan New Port Rail Center. They found that Korea Rail Operation Company complied with “Railroad transportation safety act” in which safety process to prevent accident was defined.

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

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

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

Transportation of sodium cyanide by sea and air is not applicable to SAM IK LOGISTICS Co. Ltd.

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

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

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

Since the year 2010 until now, the drivers have pager and mobile phone. During transportation, they have communicated with the Ulsan Center, Busan Station, Busan New Port Rail Center and Seoul Head Office as necessary. They have communication channel sheet on which telephone numbers of SAM IK LOGISTICS Co., Ltd., safety team of TongSuh Petrochemical Co., Ltd., Industrial safety and health agency, police, hospitals in Ulsan and Busan and fire fighting agency were defined.

The SAM IK LOGISTIC Co., Ltd. provided the pagers to each driver, recorded the pager number and tested once per week. The test results were recorded in log sheets. Usually the drivers communicated with Ulsan Center, Busan station, Busan New Port Rail Center during transportation. The function of pager can be actually tested every transportation. Each driver has mobile phone and the number of mobile phone was registered to emergency communication channel. The mobile phone controlled by driver individually. But according to Cyanide Transportation Operational Manual SCTM-01, Chapter 1.6, the driver should control the mobile phone properly, so that can be used in emergency situation and transportation.

In May 2013, SAM IK LOGISTICS Co., Ltd. has conducted periodic route evaluation for two main routes and alternative route for sodium cyanide transportation. During the route evaluation, they could not find any communication blackout area along the transportation main route and alternative route.

Since the year 2010 until now, SAM IK LOGISTIC Co., Ltd. defined and implemented the tracking of sodium cyanide transportation in Cyanide Transportation Operational Manual SCTM-01. For each transportation by truck and trailer, the progress of transportation can be checked by mobile communication between driver, Ulsan Center, Busan Station and Busan New Port Rail Center. The

SAM IK LOGISTICS Co., Ltd. Do Sik, Yoon 03 October 2013  
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Name of Transporter Lead Auditor Signature Date  
Page 8 / 16



SAM IK LOGISTICS Co., Ltd.

Ulsan Center, Busan Station and Busan New Port Rail Center have maintained the transportation log sheets in which the transportation order number, truck and trailer number, drivers name, train number, departing time and arriving time were recorded.

The inventory control was defined and implemented in Cyanide Transportation Operational Manual SCTM-01. The TongSuh Petrochemical Co., Ltd. input the dispatch amount, container number and date for individual transportation order in their ERP system. They record the same items in dispatch sheet and issued to driver of SAM IK LOGISTIC Co., Ltd. Drivers convey the sodium cyanide container from TongSuh Petrochemical Co., Ltd to Ulsan Center and submit the dispatch sheet to Ulsan Center. The Ulsan Center maintains the dispatch sheet and send the copy of dispatch sheet to Busan Station and Busan New Port Rail Center by mail or fax. Busan Station and Busan New Port Rail Center check the containers delivered by train with the detail items in dispatch sheet, and then order the driver for the transportation from Busan Station to Busan Port and Busan New Port Rail Center to Busan New Port. The driver convey the sodium cyanide container and submit the dispatch sheet to shipping company. During the above transportation, the inspection of lock on door and container appearance were implemented and results were recorded by Ulsan Center, Busan Station and Busan New Port Rail Center.

The Ulsan Center, Busan Station and Busan New Port Rail Center have maintained the transportation log sheets on which the transportation order number, truck and trailer number, drivers name, train number, departing time and arriving time were recorded.

The dispatch and transportation control was defined and implemented as in Cyanide Transportation Operational Manual SCTM-01. TongSuh Petrochemical Co., Ltd. inputs the dispatch amount, container number and date for individual transportation order in their ERP system. They record the same items in dispatch sheet and issued to driver of SAM IK LOGISTIC Co., Ltd. and then, the dispatch sheets were finally communicated to shipping company. During the audit, it was found that the amount of sodium cyanide in container and transportation orders were recorded in each dispatch sheet, ERP system of TongSuh Petrochemical Co., Ltd and transportation log sheets in Ulsan Center, Busan Station and Busan New Port Rail Center.

Material Safety Data Sheets were available during roadway transportation, railroad transportation, Ulsan Center, Busan Station and Busan New Port Rail Center. The drivers, operators and office members maintain Material Safety Data Sheets in truck, train, storage area or office.

For railroad transportation, SAM IK LOGISTIC Co., Ltd. has checked the railroad transportation route from Ulsan Center to Busan Station and Busan New Port Rail Center. They found that Korea Rail Operation Company complied with "Railroad transportation safety act".

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

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

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

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

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

When SAM IK LOGISTICS Co. Ltd was initially ICMC certified in the year 2010, they considered Ulsan Center and Busan Station as the interim storage areas. As the Busan New Port recently used, the SAM IK LOGISTICS Co., Ltd. additionally identified the Busan New Port Rail Center as an interim storage area. Therefore, they have considered and controlled the three sites as Ulsan Center, Busan Station and Busan New Port Rail Center as interim storage areas.

In Ulsan Station and Busan New Port Rail Center, only the trans-loading works by fork lifter was implemented. And actually there is no temporary storage for the sodium cyanide container on the ground in Ulsan Center and Busan New Port Rail Center. However they controlled the trans-loading areas as below.

- Install the notice panel in which sodium cyanide presence, no smoking & eating, prohibit fire.
- Install emergency preparedness in which the use of personnel protective equipment, control of spilled sodium cyanide and communication channel defined.

They also maintained personnel protective equipment as mask, glove, rubber boot, etc. and control equipment as shovel, film bag, sand etc.

In Busan Station, the SAM IK LOGISTICS rent about 400m<sup>2</sup> from Korea Railroad Operation Company and use as dangerous substance storage area. The sodium cyanide containers transported from train was unloaded by fork lifter and maintained temporary about 1 or 2 days in the interim storage area. Then the sodium cyanide containers were loaded to truck and trailer and transported to Busan Port.

Busan Station office team controlled the interim storage area as below.

- Install the notice panel in which sodium cyanide presence, no smoking & eating, prohibit fire.
- Install emergency preparedness in which the use of personnel protective equipment, control of spilled sodium cyanide and communication channel defined.

They have also maintained personnel protective equipment as mask, glove, rubber boot, etc. and control equipment as shovel, film bag, sand etc.

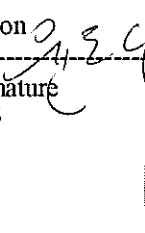
The Ulsan Center and Busan New Port Rail Center areas were totally fenced and prevented unauthorized access to those areas. Only Ulsan Center and Busan New Port Rail Center member, driver and member of Korea Railroad Operation Company are admitted for the entrance. Visitors shall be checked, registered and admitted the entrance.

In Busan Station, the interim storage area of sodium cyanide container was fenced and locked by Busan Station office member. Only the Busan Station office member as nominated controller, manager and fork lifter operator are admitted for the entrance. The interim storage area is controlled by Busan Station office member. The Busan Station area was overally and appropriately controlled by Korea Railroad Operation Company, Its security level is relatively high.

In Ulsan Center and Busan New Port Rail Center, the trans-loading works were implemented. So the sodium cyanide containers were maintained in train and partially truck & trailer.

As the sodium cyanide containers were loaded in train, and separated from incompatible chemicals as acid, oxidizer and explosives. In Busan Station, the sodium cyanide containers were maintained in nominated area as above. That area was fenced and controlled by Busan Station office member to prevent the access of foreigner and incompatible chemicals as acid, oxidizer and explosives. The sodium cyanide stored in containers of which the bottom is not directly contacted with ground.

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature  
Page 10 / 16

Date

Therefore, possibility of mixing with other materials is very low.

The sodium cyanide was initially packaged in film bag and then packaged again by woven bag or drum. The woven bag and drum were packaged again by wooden box and then inserted into container. The sodium cyanide containers were maintained in interim storage area to prevent the contact with water as below;

- 1) The sodium cyanide was maintained in container of which the bottom was not directly contact with ground.
- 2) The sodium cyanide was maintained in container designed & made to protect rain water. So the sodium cyanide stored in a manner designed to minimize the potential contact with water. The possibility of water contact in Ulsan Center, Busan Station and Busan New Port Rail Center is very low.

The sodium cyanide containers were maintained on truck, trailer and train in Ulsan Center and Busan New Port Rail Center and nominated area in Busan Station. Those interim storage areas are opened. So, no need for ventilation of hydrogen cyanide gas.

In Ulsan Center, the trans-loading works from truck & trailer to train was implemented. And in Busan New Port Rail Center, the trans-loading works from train to truck & trailer was implemented. The trans-loading works were implemented by fork lifter. Those areas were segregated from water line and any other vehicle and foreigner. So any spilled sodium cyanide cannot spread to other area and cause extra contamination of water and land by vehicle and foreigner. In Busan Station, the sodium cyanide containers were maintained in nominated storage area for which bunds were installed around that area. So, the spilled sodium cyanide cannot be released into water or spread to other area and cause extra contamination. The capacity seems enough to prevent the extend of release of spilled sodium cyanide because the interim storage area is about 400m<sup>2</sup>.

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

**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.*

<b>The operation is</b>	<b>X in full compliance with</b> in substantial compliance not in compliance with	<b>with Transport Practice 3.1</b>
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*Summarize the basis for this Finding/Deficiencies Identified:*

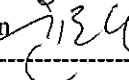
The SAM IK LOGISTIC Co., Ltd. identified possible emergency situations as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. They defined and maintained the emergency response plan in Cyanide Transportation Operational Manual SCTM-01. They defined what they should do, wearing of personnel protective equipment, using of treatment equipment for spilled sodium cyanide, communication channel and relevant external responders such as sodium cyanide manufacture "TongSuh Petrochemical Co., Ltd.", shipping companies, export consigner, Korea safety and health agency, police hospitals in Ulsan and Busan.

The SAM IK LOGISTIC Co., Ltd. identified possible emergency situations as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. They defined and maintained the emergency response plan in Cyanide Transportation Operational Manual SCTM-01. And also they prepared detail emergency response plans those can be applicable for such cases individually as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. So the emergency response plan in Cyanide Transportation Operational Manual SCTM-01 can be applied over all emergency situation. And also the detailed emergency response plans can be applied case by case to relevant emergency situation. During May 2013, they revised the communication channel in emergency response plan to include the Busan New Port, Busan New Port Rail Center and Hyosung Corporation as consigner.

The SAM IK LOGISTIC Co., Ltd. transported the solid sodium cyanide. They prepared the emergency response plan appropriate to overall emergency situations possibly expected for solid sodium cyanide transportation in Cyanide Transportation Operational Manual SCTM-01. The plan considered the solid sodium cyanide packaged in film & box and transported in container. So considering the spillage of solid sodium cyanide, they define the preparation of treatment equipment, personnel protective equipment and neutralization method in emergency preparedness plan. According to the plan, they will use sawdust, cement powder and sand to collect and neutralize the spilled sodium cyanide.

The SAM IK LOGISTIC Co., Ltd prepared the emergency response plan appropriate to overall emergency situations in Cyanide Transportation Operational Manual SCTM-01. They considered the two transportation methods as roadway transportation and railroad transportation. They also received comments and information from TongSuh Petrochemical Co., Ltd., Industrial safety and health agency and Korea Railroad Operation Company and reflected to the emergency response plan. They also communicated the emergency response plan to Korea Railroad Operation Company.

The SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to over all

SAM IK LOGISTICS Co., Ltd. Do Sik, Yoon  03 October 2013

Name of Transporter

Lead Auditor Signature

Date

emergency situations in Cyanide Transportation Operational Manual SCTM-01. And also they prepared detail emergency response plans those can be applicable for such cases individually applicable as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. During the preparation of detail emergency response plans, they traced two main transportation route and alternative transportation route. They checked the infrastructure of those three transportation routes. The check results of road condition, proximity of water, bridge condition, railroad condition and road traffic condition were reflected to detail emergency response plan.

The SAM IK LOGISTIC Co., Ltd. considered the design of the transportation truck, trailer and train. They only use double walled transportation truck and trailer. So the containers were fixed as designed in doubled walled transportation truck and trailer. They do not transport tank lorry, so no need to consider the top or bottom unloading. The train operation by Korea Railroad Operation Company was checked and traced the overall transportation route. The checked results were reflected to detail emergency plan.

The SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to overall emergency situations in Cyanide Transportation Operational Manual SCTM-01. And also they prepared detail emergency response plans those can be applicable for such cases individually as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. In each detail emergency response plan, they defined steps from starting of emergency to finalizing the emergency situation. The detail response actions, responsibility and relevant external responder were defined in each step.

The SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to overall emergency situations in Cyanide Transportation Operational Manual SCTM-01. They identified outside responders as below. Those outside responders were almost same as identified in 2010 when they initially ICMC certified except Hyosung Corporation registered in the year 2013.

- Customer and consigner : TongSuh Petrochemical Co., Ltd., SamSung C & T Corporation, Hyosung Corporation, Shipping Companies as HanJin, Hyundai, MSC, Mersk etc.
- Transportation Company : Korea Railroad Operation Company
- Government body : Fire fighting agency, Industrial safety and health agency, Local government office as Ulsan city office and Busan city office, Police
- Hospital : Hospital in Ulsan and Busan,

They defined the general roles of above outside responders in Cyanide Transportation Operational Manual SCTM-01. The detail response actions, responsibility and relevant external responder were defined in each step of detail emergency plan.

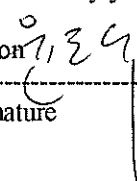
*Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.*

The operation is **X in full compliance with** in substantial compliance **with Transport Practice 3.2**  
 not in compliance with

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

SAM IK LOGISTIC Co., Ltd. prepared safety training plan every year for their drivers and employee.

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature

Date

SAM IK LOGISTICS Co., Ltd.

In the training plan, detail training items were defined for every month. The emergency response training was planned on a quarterly basis. During the training, they use the emergency response plan as training material. After the training, they recorded the training results and maintained the records for 3 years according to their procedure. In February and May 2013, the training for emergency plan was implemented according to the safety training plan and also results were recorded. .

SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to overall emergency situations in Cyanide Transportation Operational Manual SCTM-01. And also they prepared detail emergency response plans those can be applicable for such cases individually applicable as sodium cyanide release to road, land, surface water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. In the emergency response plan, the roles and responsibilities of driver, team leader and team member of Ulsan Center, Busan Station, Busan New Port Rail Center and Seoul head office, other relevant team and external agency were defined.

SAM IK LOGISTIC Co., Ltd. defined the emergency response equipment in Cyanide Transportation Operational Manual SCTM-01, and also in detail emergency response plans. And also they prepared lists of emergency response equipment as personnel protective equipment and treatment equipment for the case of transportation and interim storage. The drivers should maintain the list and emergency response equipment as in list in truck during transportation. The interim storage area also maintains the list and emergency response equipment as in list around the interim storage area and office. During audit, they maintained personnel protective equipment and treatment equipment as defined in list and emergency plan.

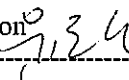
According to Cyanide Transportation Operational Manual SCTM-01, Ulsan Center, Busan Station and Busan New Port Rail Center office member as safety representative should inspect emergency response equipment in driver's truck and interim storage areas. The inspection should be implemented once per month and results were recorded. Main inspection items are maintaining of emergency response equipment as in list and effective function of the equipment. During site audit, it was found that they maintained personnel protective equipment and treatment equipment as defined in list and emergency plan.

The railroad transportation is implemented by Korea Rail Operation Company. SAM IK LOGISTIC Co., Ltd. made contract agreement with the Korea Rail Operation Company for sodium cyanide transportation. In the contract agreement, the responsibility of Korea Rail Operation Company to comply with railroad transportation safety act and safety manual was defined. In the safety manual, the role and responsibility of Korea Rail Operation Company for emergency situation as sodium cyanide spillage to land and release to water was defined. And also procedure and emergency preparedness were communicated from SAM IK LOGISTIC Co., Ltd. to Korea Rail Operation Company. So the role and responsibility during an emergency response was delineated to Korea Rail Operation Company.

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

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

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon 

03 October 2013

Name of Transporter

Lead Auditor Signature  
Page 14 / 16

Date

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

The SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to over all emergency situations in Cyanide Transportation Operational Manual SCTM-01. They identified outside responders as below.

- Customer and consigner : TongSuh Petrochemical Co., Ltd., SamSung C & T Corporation, Hyosung Corporation, Shipping Companies as HanJin, Hyundai, MSC, Mersk etc.
- Transportation Company : Korea Railroad Operation Company
- Government body : Fire fighting agency, Industrial safety and health agency, Local government office as Ulsan city office and Busan city office, Police
- Hospital : Hospital in Ulsan and Busan,

According to Cyanide Transportation Operational Manual SCTM-01, they have checked twice per year the information of above outsider responders as contact person name, telephone number, etc., and appropriately maintain those information till now.

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

**The operation is** **X in full compliance with** **with Transport Practice 3.4**  
 in substantial compliance  
 not in compliance with

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

The SAM IK LOGISTIC Co., Ltd. prepared the emergency response plan appropriate to overall emergency situations in Cyanide Transportation Operational Manual SCTM-01. In the emergency plan, the remediation as recovery and protect for released sodium cyanide, decontamination of soil and water, control & disposal of wastes etc. were defined. They also communicated the manual to Ulsan and Busan Office of Korea Railroad Operation Company.

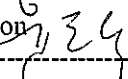
According to emergency response plan in Cyanide Transportation Operational Manual SCTM-01, the prohibit of the use of sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat sodium cyanide that has been released into surface water was defined.

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

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

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

According to emergency response plan in Cyanide Transportation Operational Manual SCTM-01, they should check the emergency response plan twice per year and revise the contact information and detail process with the reflection of changes in three transportation routes. In May 2013, they revised emergency response plan especially the communication channel to include the relevant bodies in new transportation route from Ulsan Center to Busan New Port. They reviewed the plan's adequacy in May 2013 in Ulsan Center, Busan Station and Busan New Port Rail

SAM IK LOGISTICS Co., Ltd. Do Sik, Yoon  03 October 2013

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Name of Transporter Lead Auditor Signature Date

Page 15 / 16

SAM IK LOGISTICS Co., Ltd.

Center. They do the mock emergency drill twice per a year. The mock emergency drill was implemented in Ulsan Center, Busan Station and Busan New Port Rail Center in May 2013. They checked the overall process and adequacy of emergency response plan and recorded the results. Only some communication channel was revised. Also, cooperated emergency mock drill was implemented 4 May 2012 with TongSuh Petrochemical Co., Ltd in Ulsan area. The mock drill results were maintained in TongSuh Petrochemical Co., Ltd and Ulsan Center also. Since the year 2010 until now, there was no actual emergency case in transportation process of SAM IK LOGISTICS Co., Ltd.

SAM IK LOGISTICS Co., Ltd.

Do Sik, Yoon

03 October 2013

Name of Transporter

Lead Auditor Signature

Date