

**SUPPLY CHAIN AUDIT SUMMARY
POLYMETAL INTERNATIONAL PLC
AMURSK POX HUB**

APRIL 2019



Prepared by

WARDELL ARMSTRONG INTERNATIONAL

**Sir Henry Doulton House, Forge Lane, Etruria
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www.wardell-armstrong.com



SUMMARY AUDIT REPORT

Name of Mine: Amursk Pox Hub
Name of Mine Owner: JSC Polymetal
Name of Mine Operator: JSC Polymetal
Name of Responsible Manager: CSO: Daria Goncharova
Address: Prospect Narodonogo Poolchenlyya 2
State/Province: St Petersburg Country: Russian Federation
Telephone: +7812 334 3666 Fax: +7812 753 6376 E-Mail: pr.polymetal.ru

Location detail and description of operation:

Location

The AGMK facility is located in Amursk – the city has a population of approximately 43,000 people, located on the northern bank of the Amur river in the Khabarovsk territory of the Russian Federation, 350 km from Khabarovsk and 54 km from the large industrial city of Komsomolsk-on-Amur. See Figures 1.1 and 1.2.



Map of Russian Federation

Polymetal employees DVGL and VTS to organise the transportation of cyanide from the Port of Nakhodka to AGMK. The cyanide is transported from Tongsoh production site by Hyosong (supply chain) who are both signatories of the Code. DVGL prepares all the importation documentation and customs requirements and VTS provides all the logistics for delivery of cyanide to site.

The cyanide is received at the port of Nakhodka from South Korea. Nakhodka Port holds a licence for the importation of Dangerous Goods (DGs). Included in the license is cyanide.

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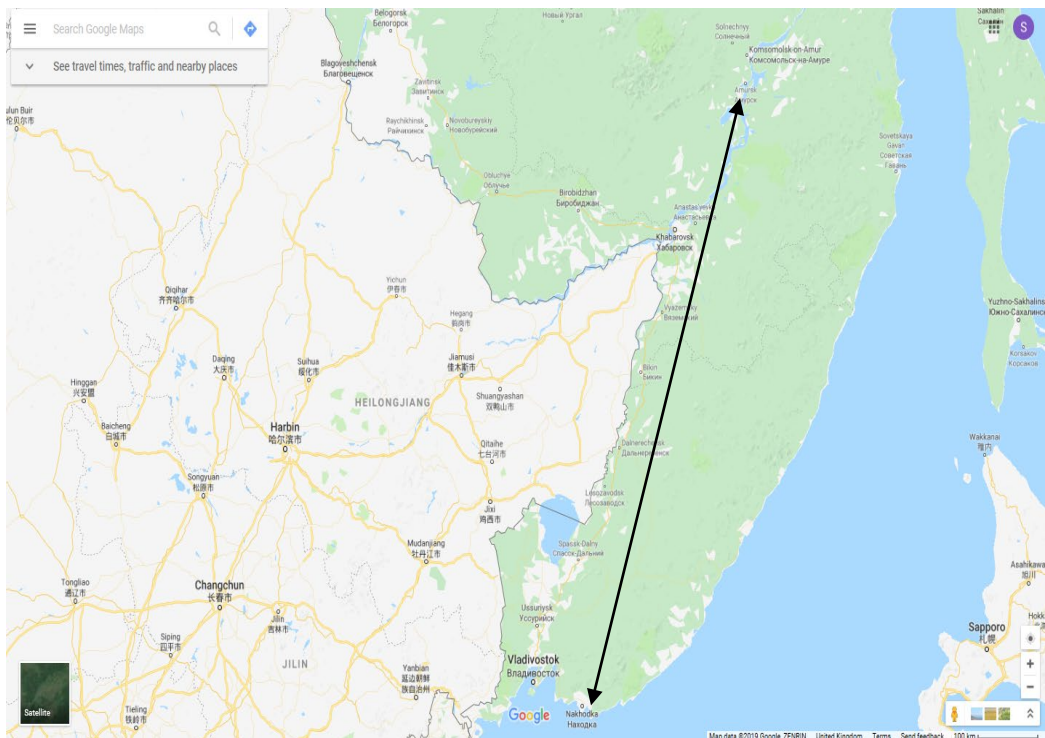
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SUMMARY AUDIT REPORT

VTS uses its own ship to bring cyanide to Nakhodka Port, where it is unloaded at the harbour by VTS's own crane. The cyanide arrives in 20 feet UN approved shipping containers and taken to the Interim storage within the port area for Dangerous Goods (DGs). On completion of customs documentation and consignor notes, Heavy Goods Vehicles (HGVs) provided by VTS transport the cyanide to AGMK.

The cyanide is delivered by VTS to AGMK designated cyanide storage area, where the containers are unloaded and placed in the secure store. When cyanide is required by the processing plant it is moved by AMMC, during this movement representatives from AGMK H&S, security and process plant representatives are in attendance.

It should be noted that DV Group Logistics and VTS are not signatories of the Code independently, the supply chain (transport audit) is under the auspices of Polymetal International plc.



Nakhodka Port to Amursk

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SUMMARY AUDIT REPORT

Auditor's Finding

This operation is

- in full compliance
- in substantial compliance *(see below)
- not in compliance

with the International Cyanide Management Code.

Include one of the following statements for Recertification Audit Reports:
This operation has maintained full compliance with the International Cyanide Management Code throughout the previous three-year audit cycle.

During the previous three-year audit cycle, this operation experienced non-compliance with Code requirements, significant cyanide incidents requiring notification to ICMI and/or cyanide exposures or releases that would require disclosure under Item 9.3.3 of the Mining Operations Verification Protocol. Further information and the rationale for the auditor's finding are provided under Standard of Practice.

* The Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

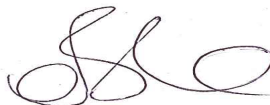
Audit Company: Wardell Armstrong International

Audit Team Leader: Christine Blackmore

E-mail: cblackmore@wardell-armstrong.com

Date(s) of Audit: 6-11 November 2018

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SUMMARY AUDIT REPORT

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 Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.

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Name of Facility

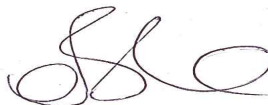


Signature of Lead Auditor

April 2019

Date

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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 in full compliance with
 in substantial compliance with Transport Practice 1.1
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

VTS provisionally design the route for any Dangerous Goods (DGs) including cyanide that they will be carrying. The route is then provided to Russian Federation Authorities (RFA) for approval. Once approval is given, any deviations from the specified routes is an offence.

The routes are designed using the Russian road classification system which takes into consideration travelling through towns and villages, road difficulties for example bends, steep hills and bridges. Deviations from the specified routes is an offence. Each driver has a responsibility to give feedback during and on completion of the journey, for such as flooding, landslides and anything that could impact on road conditions.

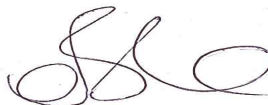
In accordance with RF law VTS are only obliged to inform the RF Ministry of Transport, who then inform the RF CD. The CD designates the roles and responsibilities should there be an emergency.

The company ensures safety and security by tracking all vehicles (GPS). Two drivers are despatched with each vehicles when ensures no stops are required, techographs are fitted in each vehicle to certify that drivers only drive 8hrs and take the specified breaks.

Each vehicle is equipped with emergency response equipment such as PPE, masks, MSDS and a copy of the ERP. The ERP contains details of what the drivers need to do and all the emergency contact numbers. All incidents/accidents are reported to the RF Civil Defence (CD) who take over and manage emergency situations.

The RF has designated road classifications which take into account the risk factors for each route, for example the route selection is based on type of vehicle and goods being carried (in this case hazardous materials), this forms part of the classification system. The classifications system takes into consideration the associated risks of a route, for example avoiding villages, avoiding bridges, axil weights. Once a route has been approved It is against the law for a vehicle to deviate from this route. However, it is in VTS driver instructions that they provide feedback during and after the trip in case other hazards have been encountered for example: accidents, landslides, road closures. Should this be the case the transporter is obliged by law to inform the RF who will if needed specify an alternative route.

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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

Summarize the basis for this Finding/Deficiencies Identified:

VTS has provided driving licenses and their qualifications the carriage of Dangerous Goods (DGs) which includes cyanide. All DG drivers have undertaken courses in accordance with ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road), for example 30 days 4 hrs per day, this culminates in an examination held at St. Petersburg University, which they need to pass in order to receive the special DG license. The ADR training includes classification 6, the designated UN classification for cyanide.

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

Summarize the basis for this Finding/Deficiencies Identified:

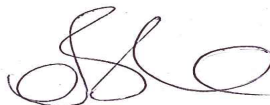
The Heavy Goods Vehicles (HGVs) are designed to carry shipping containers. The trailers used are able to carry heavier weights (axle weight) than the permitted cyanide tonnage per container (20'). Inspections by the RF are undertaken every 3 months by the RF Ministry of Transport, these inspections ensure that the tractor and trailers are in good working order.

The shipping containers are compliant with UN specification. The containers are sealed as they leave the manufacturer and not opened until it reaches AGMK.

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

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

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Summarize the basis for this Finding/Deficiencies Identified:

The shipping containers are compliant with UN specification and carry placards designating the UN code 1689 classification 6. All vehicles, trailers and containers are inspected prior to departure regardless of cargo as a routine. The inspection includes a sign off sheet. The Auditor went through the vehicle checking and sign off procedure during the site visit. Each tractor and trailer are on a rolling maintenance programme. The Auditor was shown the programme and how maintenance is managed.

By RF law an inspector from the ministry of transport visits and inspects each vehicle carrying DGs every 3 months. These visits are recorded. Any defects and the vehicle is out of service until rectified to their satisfaction. VTS also undertakes regular maintenance servicing of their vehicles. 20ft shipping containers are loaded in the central part of the trailers and locked in place.

Techographs are fitted into each DG vehicle. These are submitted by law to the RF ministry of Transport. Drivers are permitted to drive 8hrs, but breaks need to be taken within the specified 8 hours.

VTS has a reporting procedure to the Ministry of Transport and the CD if there are any difficulties with routes. Should any alternative routes be required these will be selected and approved by the RF.

Before each trip a "trip ticket" needs to be prepared. This by RF law involves drug and alcohol testing and a pre-trip medical assessment (Doctor undertakes this at the local clinic), all this is recorded before the drivers is signed as fit to take the cyanide to site. On completion of the trip a further medical assessment is carried out, this is also entered on the "trip ticket" for completion. Additionally, full physical and psychiatric check are done annually.

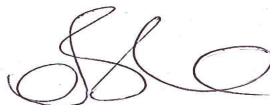
Transport Practice 1.5: *Follow international standards for transportation of cyanide by sea and air.*

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

Summarize the basis for this Finding/Deficiencies Identified:

VTS owns and operates the ship that transports the cyanide. The ship sails from South Korea to Nakhodka, Russia. The Auditor was presented with the ships manifest, in order to check the cyanide was not transported in any non-compatible substances. VTS shipping operates under the auspices of the International Maritime Organization.

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

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

Summarize the basis for this Finding/Deficiencies Identified: (Due to the sensitivity of security issues regarding storage of cyanide, no descriptions of substantial or non-compliance with this aspect of the Transport Practice should be provided.)

All vehicles are fitted with GPS trackers, Techographs and each driver has a mobile telephone. Before leaving VTS depot and as part of the daily checks of vehicles regardless of load a communications check is undertaken. VTS assured the Auditor that there were no blackout areas en route to AGMK. VTS drivers contact the depot at 2 hour intervals.

Documentation issued when the cyanide leaves the manufacturer, is passed on as part of the chain of custody, e.g. through the ports, customs, transporter and AGMK at site. All loads have unique identification numbers. The information recorded on the consignment notes indicate contents and weights of each shipping container and their unique number. MSDS sheets are sent with the consignment notes and the drivers also have individual copies.

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

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

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

Summarize the basis for this Finding/Deficiencies Identified:*

On occasions the Interim storage at Nakhodka port is used. Nakhodka port has an area designated to DGs, this area has restricted access and only authorised persons are allowed in this area. The Auditor was not able to access this area, however the Auditor believes safety and security is taken very seriously at Nakhodka port and has no reason to believe this is not the case for the DG area. All appropriate signage was apparent in all areas visited within the port.

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The port boundary is fenced and has 24hr surveillance via CCTV and security personnel. The designated DG area is fenced within the port fence boundary. This also has 24 hr CCTV and is patrolled. The Auditor witnessed this during the conducted tour of the port area.

Discussions with the Port Authorities indicate that they are knowledgeable about cyanide and the need to keep it isolated from incompatible substances. The cyanide enters the port in UN approved shipping containers as per the cyanide leaving the manufacturers. These shipping containers are not opened at port. The design of a shipping container prevents the cargo being directly on the ground surface. The cyanide shipping containers are stored outside.

All around the port and in the DG area are first responder equipment, this equipment includes breathing apparatus, temporary bunds, shovels and similar suitable emergency equipment

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

Transport Practice 3.1: *Prepare detailed emergency response plans for potential cyanide releases.*

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

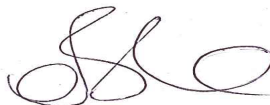
Summarize the basis for this Finding/Deficiencies Identified:

VTS have prepared an Emergency Response Plan (ERP) and procedures are in place. Each vehicle carries copies. Should an emergency arise the ERP contains all contact numbers and a procedure before the RF CD arrives and takes over the situation. Part of the VTS procedure is to identify all characteristics of the incident to inform the RF CD. Only solid cyanide is transported by VTS.

The VTS ERP needs to be compliant with RF CD requirements this forms part of their DG license to operate. All drivers are trained in emergency response, this forms part of the ADR training.

The RF CD is aware that cyanide enters the port and that it is taken to AGMK. VTS inform the RF CD when a shipment is leaving the port area and en-route to AGMK.

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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

Summarize the basis for this Finding/Deficiencies Identified:

All (10) DG drivers have been trained in accordance with ADR, which includes classification 6 (cyanide is class 6). ADR training includes emergency response. Each vehicle carries a copy of the ERP. The ERP contains all the contact numbers needed in an emergency and procedures. By law the RF CD take control of emergency situations.

Each vehicle carries ER equipment as per the ADR "Vehicle Equipment", this includes:

- (each vehicle) Chocks, two warning signs (red triangles) eye wash;
- (each driver and crew member) warning vests, torch, gloves, eye protection (goggles); and
- Additional equipment required for class 6.1 (cyanide): respirator (emergency escape mask), shovel, drain protector, bucket.
- Other equipment carried by VTS drivers: chemical rubber gloves, chemical overalls, cordon tape, first aid kit, MSDS sheet, ER Plan (contact numbers in this), quick reference contact sheet, working phone and fire extinguishers.

VTS have provided a concise list of the above. The Auditor undertook a visual check of the ER equipment and undertook a photographic record.

Emergency response refresher training is undertaken on a 6-month basis as part of the responsibility under the auspices of ADR. The ER equipment is checked as part of the routine inspections.

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

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

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Summarize the basis for this Finding/Deficiencies Identified:

VTS review their ERP on an annual basis unless any changes need to be made. VTS drivers are all provided with a copy of the emergency response plan and a quick contact reference sheet. These both contain the contact numbers for the initial emergency response for example RF CD and VTS depot.

The reference sheet also has details of what information would be required for example: location of the vehicle, details of the load e.g. UN code 1689 classification 6.1, description of incident, driver details and any other relevant information. After notification to RF CD it is the responsibility of the RF CD to notify other agencies and VTS to notify the receiving mine, especially if the mine is reasonably local and can assist.

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

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

Summarize the basis for this Finding/Deficiencies Identified:

The RF CD takes control of any emergency situations including DG (cyanide spillages), this includes any remediation and clean-up of spillages. The RF CD have specially trained staff to provided this service. The RF CD do take into consideration what remediation chemicals should be used. Neither VTS or Amursk are consulted on this aspect. The Auditor understands that no cyanide transportation spillages have occurred.

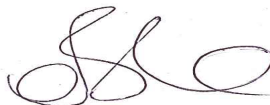
Transport Practice 3.5: *Periodically evaluate response procedures and capabilities revise them as needed.*

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

Summarize the basis for this Finding/Deficiencies Identified:

The Auditor understands that the RF CD has a review structure of their documentation, and implement a feedback reporting from any accidents, and where necessary amendments, corrections are implemented in their procedures. The Auditor understands that to date no cyanide spillages have occurred.

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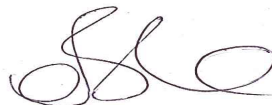
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VTS carries out mock exercises and tests the system with regard to informing the RF CD to ensure that drivers are able to communicate the correct information and undertake the preliminary response. As part of the ADR training the drivers are aware of their responsibilities in case of emergency.

VTS and the Auditor have no control over the RF CD, however the Auditor is confident that mock ER drills are undertaken, and records are kept of this. To the best of the Auditor's knowledge no cyanide accident has been reported by VTS, the Auditor has no reason to dispute this statement.

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