



**INTERNATIONAL CYANIDE  
MANAGEMENT INSTITUTE  
Gold Mining Operations**

# **Summary Audit Report Form**

**For the  
International Cyanide Management Code  
For The  
International Cyanide Management Code  
ANGLO GOLD ASHANTI / QUEIROZ MINING OPERATION  
1st. Recertification of ANGLOGOLD ASHANTI – QUEIROZ UNIT  
Nova Lima City – Minas Gerais – Brazil  
Period: December 01 ~ 05, 2014**

[www.cyanidecode.org](http://www.cyanidecode.org)

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Anglogold Ashanti – Queiroz Plant Mining Operation

Date: December 2014

Lead Auditor Signature  
Julio C. M. Monteiro

## **SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS**

### ***Instructions***

1. The basis for the finding and/or statement of deficiencies for each Standard of Practice should be summarized in this Summary Audit Report. This should be done in a few sentences or a paragraph.
2. The name of the mine operation, lead auditor signature and date of the audit must be inserted on the bottom of each page of this Summary Audit Report.
3. An operation that is in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.
4. The Summary Audit Report and Corrective Action Plan, if appropriate, with all required signatures must be submitted in hard copy to:

**International Cyanide Management Institute (ICMI)**  
**1400 I Street, NW, Suite 550**  
**Washington, DC 20005, USA**
5. The submittal must be accompanied by 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report and Corrective Action Plan, if necessary, on the Code web site, and 2) a completed Auditor Credentials Form. The lead auditor's signature on the Auditor Credentials Form must be certified by notarization or equivalent.
6. Action will not be taken on certification based on the Summary Audit Report until the application form for a Code signatory and the required fees are received by ICMI from the applicable gold mining company.
7. The description of the operations should include sufficient information to describe the scope and complexity of the gold mining operation and gold recovery process.

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## SUMMARY AUDIT REPORT

### GENERAL INFORMATIONS

Name of Mine: ANGLOGOLD ASHANTI / QUEIRÓZ MINING OPERATION  
Name of Mine Owner: ANGLOGOLD ASHANTI  
Name of Mine Operator: ANGLOGOLD ASHANTI  
Name of Responsible Manager: Elvio de Paula Baumgratz  
Address: Fazenda Rapaunha, s/n, Galo  
State/Province: City Nova Lima, Minas Gerais State  
Country: Brazil  
Telephone: 55 (31) 3589-2232  
E-Mail: etbaumgratz@anglogoldashanti.com.br  
Location detail and description of operation:

#### Introduction

The Queiroz Mining Operation is located in Country zone (10 km) of Nova Lima Town, Minas Gerais State, Brazil.

Gold production process starts at Cuiabá plant where the Mechanical Treatment is situated. After that the concentrate containing gold goes to Queiroz Plant where the Pyrometallurgy and Hydrometallurgy are responsible of the end of the process. A description of each process is given below:

#### Cuiabá Plant

As it was said above, Cuiabá plant contains the Mechanical Treatment that consist in reduce size and concentrate material that we have interest, and to do that, it uses these following process: Crushing, Milling, Flotation and Filtering to take off water from the pulp, so that it can be transported to Queiroz Plant using the Aerial Ropeway

#### Crushing

There is a primary crushing inside the mine and after that the ore is sent to the surface crushing. Crushing is just a process to reduce size of ore stones so that it can feed the Mill with a small size.



## SUMMARY AUDIT REPORT

### Milling

Milling process is responsible to reduce ore size so that it assumes a powder size. After that the ore goes through gravimetric concentrators so the free gold can be taken of the gold. However, approximately 85% of the gold is included in sulfur molecule and is necessary additional processes to recovery it.

### Flotation

All the ore coming from milling pass through flotation area that concentrates the sulfur by the reduction of mass. Since the gold molecule is included in sulfur it's grade becomes higher with sulfur concentration. The concentrate produced must have a minimum of 28% of sulfur because that's a very important parameter for the Pyrometallurgy process.

### Filtering

So the concentrate can be sent to Queiroz plant through Aerial Ropeway, it is necessary that the amount of water in it suffer reduction. To get this the concentrate is filtered and the amount of water decreases to 11% of mass.

### Queiroz Plant

At Queiroz plant the chemical processes are made to recover the gold from the concentrate. Queiroz plant process is parted in to distinct areas: Pyrometallurgy and Hydrometallurgy.

### Pyrometallurgy

Once the concentrate receives water to become a pulp again, it is pump to Pyrometallurgy area so it can be roast. The concentrate must have a minimum of 28% of sulfur and a density of approximately 2.0 t/m<sup>3</sup> so the exothermic reaction of oxidation can occur.

In the roaster the concentrate is oxidized by the addition of atmospheric air and a temperature of 700°C inside the roaster. In these conditions the sulfur is oxidized generating sulfur dioxide and exposing the gold to cyanide attack in the Hydrometallurgy process.

The sulfur dioxide is converted into sulfur trioxide and then it's used to make sulfuric acid.



## SUMMARY AUDIT REPORT

The concentrate coming out of the roaster then is called calcine. The Calcined is quenches, thickened and finally pumped to Hydrometallurgy area.

### Hydrometallurgy

The calcine received from Pyrometallurgy at this time can be leach by cyanide. The calcine goes to tanks with addition of air. The pH rate is controlled with addition of lime. If the pulp with a pH in a rate less than 10.5 receives, a solution of sodium cyanide there is formation of cyanuric acid in gas form, which is very dangerous.

Since the pH rate is controlled in a rate between 10.8 – 11.3 a solution with 10% of sodium cyanide is added to the pulp so that the gold can be solubilized.

The bigger part of gold is solubilize and after solid / liquid separations, the rich liquor (High level of gold) is send to the precipitation area, which precipitates the gold with addition of zinc and plumb nitrate. This precipitated material is sent to the refinery so that the gold bars can be made.

However not all of gold is taken off the pulp in the first stage of leaching. The pulp returns to leaching and then goes to CIP (carbon in Pulp) where the soluble gold is adsorbed in activated coal. Since the coal is loaded with gold, it passes through an elution process to recover the gold. The rich liquor is sent to precipitation area.

When all the possible gold is taken off (minimum of 94, 5%), the pulp and the barren solution (low level of gold) is discharged to the calcine dam. However before that all this pulp receives a solution of ferrous chloride to reduce cyanide level to less than 50 ppm.

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# SUMMARY AUDIT REPORT

## 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.

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

Audit Company: Julio Monteiro Auditores da Qualidade Ltda.

Audit Team Leader: Júlio C. M. Monteiro

E-mail: <[jmaq@iq.com.br](mailto:jmaq@iq.com.br)>

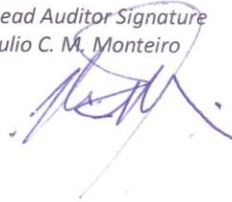
Names and Signatures of Other Auditors: Marcelo Vieira Monteiro – Auditor Reviewer 

Date(s) of Audit: RECERTIFICATION AUDIT - December 01 to 05, 2014

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.

Lead Auditor Signature  
Julio C. M. Monteiro



Anglogold Ashanti – Queiroz Plant Mining Operation

Date: December 2014

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## SUMMARY AUDIT REPORT

**1. PRODUCTION: Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.**

Standard of Practice 1.1: Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 1.1  
 not in compliance with

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

Operation has a new contract with Australian Gold Reagents Pty, with production in Kwinana, WA 6966 – Australia clearly address the requirement that the cyanide shall be produce in a facility that complies with the Code for cyanide producers and be transport by Niquinni Transportes both recertified by ICMI. There is a formal agreement number: 460002812 date September 01, 2013 at September 01. 2017. United Nations (UN), approve packaging in a wooden box with pallet base containing 1000kg net of product, in a high density polyethylene (HDPE) inner liner hermetically sealed and package in a woven polypropylene (PP) big bag with lifting loops, stowed in a 20-foot seaworthy closed general-purpose ocean containers, with 20 metric tons net, in accordance to U.N. Moreover, international Marine Dangerous Goods (IMDG) regulations. The Operation buys the cyanide from contract with Australian Gold Reagents Pty, with production in Kwinana, WA 6966 – Australia clearly address the requirement that the cyanide shall be produce in a facility that complies with the Code for cyanide producers recertified by ICMI, as evidenced at the ICMI website. Chain of custody:

1. Factory: Kwinana, WA 6966 - Australia
2. Road transport: Coogee Chemicals
3. Warehouse in origin: Patrick Terminals in Port of Fremantle
4. International shipping: MSC or Maersk
5. Port of Departure: Fremantle
6. Port of Transshipment: Singapore; Klang
7. Port of destination: Santos
8. Warehouse in destination: Santos Brazil
9. Carrier: Niquini - publication ICMI recertification in May 2014. See route Niquini carrier that was audit in Oct-14 by AGR supplier.

The document OC 4500203399 and 4500294041 called checklist, is a measure of control to the Area Import can ensure that the chain of custody is fulfill and is make every boarding process.

Verify the Due Diligence Review of Santos Port Brasil carry out in 20/Dec./2013. Reason for Due Diligence Review: To ensure Australian Gold Reagents Pty Ltd (AGR)



## SUMMARY AUDIT REPORT

transportation, handling and storage of sodium cyanide within Santos Port is to acceptable standards.

The Operation buys cyanide from a recertified producer - Australian Gold Reagents Pty and not from a distributor.

### **2. TRANSPORTATION:            *Protect communities and the environment during cyanide transport.***

Standard of Practice 2.1:    *Establish clear lines of responsibility for safety, security, and release prevention, training and emergency response in written agreements with producers, distributors and transporters.*

The operation is             in full compliance with            Standard of Practice 2.1  
    in substantial compliance with  
    not in compliance with

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

The following agreements among the Operation, the cyanide producer and the cyanide transporter were evidence and reviewed:

Producer: Australian Gold Reagents Pty, with production in Kwinana, WA 6966 – Australia – Formal Agreement Contract No. 460002812 date September 01, 2013 at September 01, 2017.

Transportation: Niquini Transportes – Formal Agreement Contract No. AGABM – 071.09 date January 01, 2012 at January 01, 2015.

[www.cyanidecode.org](http://www.cyanidecode.org)

The packaging is according United Nations (UN) approve packaging in a wooden box with pallet base containing 1000 kg net of product, in a high density polyethylene (HDPE) inner liner hermetically sealed and package in a woven polypropylene (PP). Big bag with lifting loops, stowed in a 20 feet seaworthy close general-purpose ocean containers, with 20 metric tons net, in accordance to U.N. Moreover, international Marine Dangerous Goods (IMDG) regulations and according Brazilian Road Transport Legislation. The cargo labeling is in Portuguese in accordance with the Brazilian Road Transport Legislation. The solid cyanide container is stored and loaded at Australian Gold Reagents Pty Ltd (AGR) facilities before its transport to the operation. The final transport truck convoy departs from Santos Port / Brazil facilities straight to the Operation. The board establishes the route between the producer and operation. The route risks are identify and evaluated. The route is properly paved.

The consigner (Australian Gold Reagents Pty Ltd (AGR) is responsible for the storage and security at the port of Santos, while the cyanide cargo is under the custody of the





## SUMMARY AUDIT REPORT

Brazilian Port Authority (customs). The cyanide is transport by truck (road transportation), straight from the Santos port terminal to the operation.

Verify the Due Diligence Review of Santos Port Brasil carry out in 20/Dec./2013. Reason for Due Diligence Review: To ensure Australian Gold Reagents Pty Ltd (AGR) transportation, handling and storage of sodium cyanide within Santos Port is to acceptable standards. The consigner (Australian Gold Reagents Pty Ltd (AGR) is responsible for the storage and security at the port of Santos, while the cyanide cargo is under the custody of the Brazilian Port Authority (customs). The cyanide is transport by truck (road transportation), straight from the Santos port terminal to the operation.

Verify the Due Diligence Review of Santos Port Brasil carry out in 20/Dec./2013. Reason for Due Diligence Review: To ensure Australian Gold Reagents Pty Ltd (AGR) transportation, handling and storage of sodium cyanide within Santos Port is to acceptable standards. The transport truck is receive at the Operation by a safety officer who inspects the cargo documentation, the truck condition, the Driver permits, and the safety equipment. After that, if approved, the truck is authorize to go into the Operation and parks in the cyanide reception area, specifically assigned for this activity. From this moment on, the reception Employees precede the cyanide unloading, which is monitory, from the Operation Control Room, by an internal TV system. Niquini Transportes is recertify by ICMI, and has procedures to maintain their truck fleet operational. Before to be assign to the cyanide transportation, the truck is, inspect and approved for the transportation. Records of these inspections are keep by the Driver and were evidence during the field audit (reception of cyanide at the Mine Operation). Driver is training process in order to update them on the related cyanide activities, including emergencies. Niquini Drivers shall have specific driver licenses (according to the Brazilian Legislation) for road transportation of cyanide. These licenses were evidence in the reception of cyanide in the Operation Mine and are verify by the Operation in all cyanide receiving activities. All trucks are online monitoring since its Depart from the producer until arriving in the Operation through a tracking system (auto-track), controlled by the Niquini Operation Center. All inputs are record in the onboard computer and were evidence during the field audit. The written agreement, as previously referred, addresses all the responsibilities and authorities including the extension to subcontractors, although the producer or transporter are allow by the Operation to subcontract anybody without prior acceptance by the Operation. The Operation maintains a system to monitor the contracts with the producer and the transporter.

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## SUMMARY AUDIT REPORT

Standard of Practice 2.2: *Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 2.2  
 not in compliance with

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

The contract between operation, producer and transporter clearly addresses the requirement that the transporter must be recertify by ICMI.

The following agreements among the operation, the cyanide producer and the cyanide transporter were evidence and reviewed:

The contract with company Transportation is the responsibility of Anglo Gold Ashanti; Transportation: Niquini Transportes – Formal Agreement Contract No. AGABM – 071.09 date January 01, 2012 at January 01, 2015. All the production (origin) and transport cyanide documentation has brought to the Operation by the truck Driver. This documentation is review by the Operation before the truck allowance comes in the Operation. The complete documentation verification is part of the established controls by the plant in order to receive the cyanide into the operation. The other one are relate to the truck (including the emergency kit), license and the Driver qualification. The travel records are report in an onboard computer in the truck it is also check. This practice was evidence during the field audit related to the cyanide reception in the Operation.

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## SUMMARY AUDIT REPORT

### **3. HANDLING AND STORAGE: Protect workers and the environment during cyanide handling and storage.**

Standard of Practice 3.1: *Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 3.1  
 not in compliance with

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

The NaCN reception, storage and preparation area was design and constructed between 2006 and 2007, in accordance with Brazilian Engineering Specifications. The area is already the same, as audited in the 2007 audit. It was well maintain and during the field audit, it was observe that the installation remains in conformance with ICMI principles. The “as built” documentation is maintain by the operation and was review, again, in this opportunity. The cyanide reception, storage and preparation area has also concreted floor, is under roof, and has natural ventilation system. The NaCN reception, storage and preparation area is located away from people and surface waters. The access to this area is restricted, and only the shift supervisors have the key to unlock the door of this installation. Operation uses only solid cyanide and not liquid one. Anyway, as previously mentioned, the unloading area has a concreted floor. In the event of any kind of solid cyanide release, the area configuration allows quickly recovering of the cyanide briquettes.

The cyanide preparation tank (595-TK-01) has a HCN sensor, pH sensor and level sensor (all calibrated), associated with an alarm system. Two levels of alarm were establish for each aspect (HCN, pH and level) after preparing; the solution is transfer to four distribution tanks, in the tank leaching area. All these activities are monitor at the control room, through a PLC system. The cyanide reception, storage and preparation area were built in concrete and HDPE, inside a secondary containment pool (preparation area), as evidenced in the design/ construction documentation and in the field audit. The containment pools are constructed in concrete and HDPE, according to specific Brazilian Standards. The solid cyanide is store in a specific warehouse in a well ventilate area. HCN detectors and alarm systems are in place. The Operation stores the solid cyanide in their original boxes, over pallets, on concreted floor, under roof, with adequate ventilation and there are in place controls to access the process plant and the storage area. The storage are inside a fences area,

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

richly signed and locked. Only authorized and qualified Operators are allow to access this area (NaCN reception, storage and preparation). The cyanide storage area is isolated and apart from other storage areas and specifically assign to store only solid cyanide. It was evidence that they are well maintained, clearly signed, and clean and ordered. Food and tobacco products are not allow in these areas. Annex to this area, was observe that there is an emergency room, equip with oxygen bottles, antidotes, personal protective equipment. Also observed that there is inside the cyanide preparation area an emergency shower, with low-pressure eye-washer (connected to an alarm system in the control room).

Standard of Practice 3.2: *Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 3.2  
 not in compliance with

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

The empty cyanide containers (big-bags) are wash, decontaminated, dried and sent to thermal destruction at VH Clean. All cyanide containers are wash, decontaminated and dried in a specific installation available for this activity. After that, the decontaminated big-bags are send to thermal destruction at VH Clean Ltd., a qualified supplier (by Brazilian local EPA) for this kind of activity. The effluent of this activity returns to the leaching process, through a pumping system. The cyanide wooden boxes are also send to VH Clean Ltd., to be thermally destruct. Before departing the Operation, the truck is verified to be in conformance, without any kind of leakage and completely empty. The Operation has implemented a formal inspection of the container that is send back to Niquini. This activity is record and the Niquini Transportes Driver receives a copy of the inspection record.

It was evidence that the Operation defined, documented and implemented a procedure to unload the cyanide during the reception. The Operators are training and qualified in this procedure. Records of such training activities and the field audit evidenced that. The operational procedure clearly addresses the steps to be follow and the activity is fully monitor and perform always by two Operators. The cyanide big-bags are handle with the help of lifting devices, in a specific area designed for this purpose. The lifting device is included in a preventive maintenance program. Records of its maintenance were evidence. In the warehouse the cyanide boxes are pill in three (max). In the event of any real spills, the operational procedure cover the neutralization and cleaning of the spills, which is force to the drainage system (floor

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## SUMMARY AUDIT REPORT

pumping system). It was not evidenced any kind of spills (solution or solid cyanide) during the audit. A qualified Operator, using appropriate PPE (including calibrated HCN detectors), is observed full time by a second operator that remains in a safe area. This practice was evidence in the field audit. It is important to mention that the cyanide mixing is automatic (with agitator) and not manual. All mixing activity is control from the control room.

**4. OPERATIONS:      *Manage cyanide process solutions and waste streams to protect human health and the environment.***

Standard of Practice 4.1:      *Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.*

The operation is       in full compliance with      Standard of Practice 4.1  
                                  in substantial compliance with  
                                  not in compliance with

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

The Operation designed, documented, implemented and maintains a SHE management system in order to manage its SHE aspects, including the cyanide. Operation has manuals, procedures and operational instructions in place that identify the assumptions and parameters on which the facility design was based and any applicable regulatory requirements. The operational documents in the last revision were verify. Beyond the operational and management procedures mentioned the Operation implemented inspection and preventive maintenance procedures.

The Operation did design, document and implement a change management procedure. Before implement any change in the operation configuration or procedures, an inter-disciplinary team evaluates all the potential risks involved with the proposed change. The PD 0000062 Safety Specification for New Projects was use to assess the installation of equipment for Cyanide Dosing Control in Leaching - TAC 1000 Cyanide Analyzer Controller on 20/10/12. This review was validate by the heads of SSMARS (Occupational and Health, Environmental and Social Accountability). The survey of HIRA Risk was evidenced, which review in Feb / 14 in version 15 considered the implementation of the TAC in 1000 thus reducing the residual risk. The Operation did develop and implement contingency plans, related to water balance management and other emergency scenarios linked with cyanide. Operation defined and implemented a structured inspection plan, focusing the condition of the installations and equipment's. It was evidence that the process plant (hydrometallurgy) is inspect on a

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## SUMMARY AUDIT REPORT

weekly basis. The pools inspection plan establishes different frequencies, depending on the aspects to be inspect. The frequency maybe daily, weekly, monthly and annually. All process tanks are included in the weekly inspection plan. With the inspection of the process tanks, the Operation inspects to all secondary containments. There is no leach pads or ponds at the Operation. The inspection plan includes the inspection of valves, pumps and piping system. Evidence that the Operation installed height indicators (green, yellow and red), indicating the design freeboard at the pools, facilitating the visual inspection of the freeboard.

All performed inspections are record, addressing the date, the installations that was inspect, the inspector name, and the inspection results. In the event of any nonconformance, a corrective maintenance order is issue to fix the problem. Formal inspections signed by those responsible are hold to check the equipment conditions, tanks, piping, physical structures, first aid facilities, signage, contentions, Dams and other aspects involved in the management of cyanide.

The auditor considers that the inspections are carry out in sufficient frequency to ensure and document its operation within the designed parameters.

Non-conformities find in these inspections, are release and treat in the electronic system for processing backlogs - Shares System.

There are inspections records for the RDOS – Daily Report of Operation and Safety, including name of inspector, signature, and date of inspection, corrective action and revision status. Operation defined, documented and implemented a preventive maintenance program, focusing the process plant installations. Reviewed preventive maintenance programs (and associated records) for areas 595 (cyanide solution preparation), 536 (tank leaching) and 538 (CIP). During the field audit, it was observe that the process is well maintain and is keep dry. No leakages were observe.

Operation have necessary emergency power resources to operate pumps and other equipment to prevent unintentional releases and exposures in the event its primary source of power is interrupted, as confirmed in the maintenance plan managed by the software. The Operation has reservations generators, ensuring that if necessary can become active. Evidences are available in the document Schedule of Inspection to ensure the functionality of the power generators.

Operation has a generator back-up system (GE-588-DI/ Cummins/ 450KVA), which is included in the preventive maintenance program and is tested on a weekly basis.

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## SUMMARY AUDIT REPORT

Standard of Practice 4.2: *Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.2

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

Although the Operation does not add cyanide solution in the mill (it is add at the tank leaching), the operation defined and implemented a cyanide consumption management system, in order to optimize the addition of cyanide in the leaching process, considering the quality of the ore that will be leach. The Operation (process laboratory), conducts cyanidation tests (rolling bottles) on a regular basis, in order to determine the adequate cyanide addition rate in the leaching process. It is also usual, the practice of re-cyanidation bottle testing, in order to verify and confirm that the calculated gold recovery is being obtain in real conditions. The remaining cyanide in the tailings is also monitor by the operation, every two hours. The operation also monitor the consumption of cyanide related to the amount of recovered gold. Tests "Rolling Bottles" (bottles) of re cyanidization the waste of the last Pachuca are make regularly to verify the amount of cyanide being use in leaching. Strategically, Rolling Bottles tests are also perform to new types of ore to be leach, thereby determining the best route of treatment and the most appropriate use of cyanide. The addition and cyanide solution control in the plant is automate through the CCS Cyanide Control System Equipment - TAC in 1000.2. The cyanide consumption is monitor on a regular basis (monthly). In the beginning of the year, the Operation establishes a cyanide consumption plan where, in accordance with the mineral quality and prior tests results, the maximum cyanide consumption is define for each month. It was observed, in some cases, that the real cyanide consumption was a little bit higher than that ones that were planned to be achieved (budget). Usual cyanide consumption is 185g/ton.

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## SUMMARY AUDIT REPORT

Standard of Practice 4.3: *Implement a comprehensive water management program to protect against unintentional releases.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.3

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

Operation designed and implemented a water management system. There were not any major change in this management system since the last certification audit, back in 2007. During 2011, the Operation did update the hydro-geological study of the site. This study was performed by Golder Associates (report # RT-005-099-515-2011-01-J, July/ 2011) and all previously assumed assumptions like, storm rain, evaporation rates, rain history, water intake, water outtake, seepage and tailings deposition rate were confirmed as being correct. It was evidenced that the study was assisted by a software (mudflow), where several circumstances were simulated. Beyond this updated water balance study, and in accordance with a Brazilian legislation (COPAM 87/ 2005), the operation performed a hydro-logical evaluation, performed by DAM Engineering Ltd. (report BQS-C-CA-RE-001-0, dated May/ 2011), confirming that the water balance management system of the Operation is adequate and the operation is well water balanced. The Operation has a meteorological station where, on a daily basis, it monitors the rain and evaporation rates, and compares with the design assumed values. Evidenced this control since 01/01/2010. Inspections are performed daily, weekly, biweekly, monthly, which are checked some items such as: precipitation, wind speed, temperature, evaporation, precipitation. Since the updated water balance study and rainfall All percolated liquid in Calcined Dam drainage system is directed to the lake dam and then to the ETE - Effluent Treatment Plant. Daily monitoring of precipitation and reading the lake level is complete and the data are compared with the project to implement the water balance, prevent the overflow of lakes and reservoirs and avoid unplanned cyanide solutions in the environment. There is no leach pads at QUEIROZ Plant. This was considered in the pools design and monitored on a daily basis. In order to ensure the pools will not overflow, the Operation defined a minimum freeboard of the pools, which is daily monitored. The pools are a closed circuit, equipped with a pumping system. Operation monitors, on a daily basis, the rain and evaporation rates. Evaporation is obtained from Meteorology National Institute - INMET. The pools are equipped and surrounded by drainage channels and infiltration is not a relevant aspect, although it is monitored through forty piezometers down gradient of the pools. According to Solution losses in addition to evaporation, such as the capacity of decant, drainage and recycling systems, allowable seepage to the subsurface, and allowable discharges to surface water this aspect is not relevant to the water balance of the

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## SUMMARY AUDIT REPORT

Operation, in accordance with the data evidenced in records measurements of piezometers.

The power outage was consider in the study, but the Operation implemented back-up Generators in order to mitigate the impact of this aspect.

Operation where solution is discharge to surface waters, the capacity and on-line availability of necessary treatment, destruction or regeneration systems considered that it is not relevant due to the effectiveness of the established controls (after neutralization, the effluent pass through two decommissioned the pools, actually used to provide water (when necessary) and conclude the dilution of the effluent, before release it in a surface water. Other aspects of facility design that can affect the water balance, such as the assumed phreatic surface in a tailings storage facility was consider in the initial study, updated but not relevant to the Operation circumstance. Operation implemented a daily inspection system of the pools in order to verify the effectiveness of the Water Balance Management System. Operation work the pools with an operational freeboard higher that that one established in the design, focusing the stability and safety of the TSF. It was evidenced that the operation installed some freeboard datum poles, divided in three different zones (green=conforming, yellow=alert, red=nonconforming), in order to optimize the visual inspection of the available freeboard. The Water Management System is audit by the Anglo Gold Ashanti corporate dam expert, once a year. The obtained values with those ones used in the initial probabilistic study. It was evidenced the evaporation and rain profile.

*Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.4

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

Was evidence that there is not any open water with CN WAD higher than 50 ppm at the Operation. The neutralization process of the final effluent seems to be effective, ensuring CN WAD < 50ppm. It was observe that the Operation and the pools are fenced. Operation neutralize the final process effluent with ferric sulphate and monitor the quality of the effluent, before discharged into a decommissioned pools, as previously mentioned (see 4.3). Reviewed Effluent monitoring registration CN WAD April / 14 with a mean value <0.005 mg / l, as methods:  
 -Preparation Method SM WW 22nd edition 4500 CN -I.  
 -Determination SM WW 22nd edition Method 4500 CN - F. (final effluent, before

Lead Auditor Signature  
 Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

discharge), concluding that the neutralization process has an effectiveness higher than 99%.

In this Operation is no record of wildlife mortality since 2007. The open waters are daily inspect and records maintained.

Standard of Practice 4.5: *Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.*

The operation is  in full compliance with  substantial compliance with  not in compliance with Standard of Practice 4.5

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

After the neutralization process, the effluent pass through two decommissioned TSF (open waters) before reaching the surface water. Reviewed monitoring records PQZ – 7001 date April 2014. Typical value of CN WAD is < 0.05ppm. Operation established a monitoring point, down gradient of the mixing zone, where the CN WAD is monitor on a daily basis. Typical value for CN w is < 0,005ppm (CNf will be even lower). When CN WAD is higher than 0,022 ppm, the operation determines the CN f content in the sample; using standard methods, (the operation process laboratory is ISO 17025 certified, in accordance to the local EPA requirements). All reviewed monitoring results showed CN f < 0.005ppm. Operation does not have any indirect discharge to surface waters. No cases of indirect discharges were evidence. The monitoring results of surface waters down gradient to the operations clearly shows that there is not any cyanide related contamination.

Standard of Practice 4.6: *Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.6

*Summarize the basis for this Finding/Deficiencies Identified*

Operation defined and implemented a robust water management system, where seepage was consider, but is not relevant to the water balance. Several piezometers were install down gradient of the operation, showing that there is no seepage and the underground water is not being impact by the Operation aspects. According to the monitoring results of ground water, samples showed CN t less than 0,005ppm, showing that there is no



## SUMMARY AUDIT REPORT

contamination of the underground water. The results were in compliance to environment parameters request by Brazilian Legislation- CONAMA 396/08.

Operation does not use mill tailings as underground backfill, as observed in the field audit. There is no history of seepage has cause contamination of groundwater. Monitoring results showed that the underground water is not being impact by the Operation aspects.

Standard of Practice 4.7: *Provide spill prevention or containment measures for process tanks and pipelines.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 4.7  
 not in compliance with

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

The cyanide unloading, storage, mixing and process solution tanks areas where constructed in order to prevent that any process spill could affect the human life and the environment. All these areas were observed during the field audit (engineering documentation was also reviewed) and confirmed that these areas are concreted, with secondary containments (preparation, leach and CIP tanking areas), providing a good barrier. All secondary containments volumes are, at least, 110% greater than the biggest tank at the area. Beyond that, all secondary containment areas are provide with a pumping system and drainage system, as observed in the field audit. The establishes procedures in place and being implemented to prevent discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment in these areas are provided with a pumping system and a drainage system connected to the pools. No chance for any spill to affect directly the environment. Operation does not have process tanks without secondary containment. The Auditor has checked again that all pipelines carrying cyanide solution are protect by lining to avoid any leakage and further contamination of environment. The Auditor has checked again that all pipelines carrying cyanide solution are protecting by lining to avoid any leakage and further contamination of environment.

Pipes pumping waste are located in trenches lined with plaid pad, and there blockage of valves. All pipelines and accessories are protecting with HDPE trough all its extension to collect any leaks.

Despite the fact that there is not any cyanide containing pipelines presenting a risk to surface waters, all cyanide-containing pipelines are within protected areas, with secondary containments. All cyanide tanks and pipelines are construct of materials compatible with cyanide and high pH conditions (carbon steel and/ or HDPE).

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

Standard of Practice 4.8: *Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.8

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

The Operation have quality control and quality assurance programs was implement during construction that is the same as the last recertification audit. A QA/QC program has address materials and soil compaction and is the same as the recertification audit. Observe no changes since 2007.

Found that the QA / QC records been kept since previous audits. The operation keeps the records based on the Integrated Management System and recertified (18001 and 14001 standards) establishing the retention of these documents.

Standard of Practice 4.9: *Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.9

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

Was evidence that the Operation designed documented and implemented an in depth monitoring system, focused on open waters, surface and underground waters, being in conformance with the Brazilian Environmental Legislation and this protocol.

Operation Laboratory is ISO 17025 certified by INMETRO (Brazilian equivalent to ANAB), where analytical standards methods were adequately developed by high qualified personnel, as well as sampling procedures, sampling preservation methods, custody procedures, among other aspects, as evidenced in the system and field audit at the Operation Environmental Laboratory. The sampling and analytical protocols were established by the document Standard Methods for The Examination of Water and Wastewater, 21th Edition. The analyzes for cyanide monitoring purposes in surface water, groundwater and effluent are carried out by Queiroz Laboratory and SGS Laboratory, both accredited by INMETRO as CRLO342 and CRL386 respectively. "Determination of Cyanides" specifies the sampling conditions that are registered in analyze report available in Environment Department.



## SUMMARY AUDIT REPORT

The record Water Monitoring - Operation – Field File was checked, but it has no field for wildlife or livestock activity to be filled or wildlife mortality, although some records present evidences of livestock during the data collection. The Operation carries out in a closed circuit and does not discharge process water to surface waters. A procedure to investigate wildlife mortality is in place. Records of wildlife mortality were evidenced during the inspection of pools and plant and no mortality was associated to contact with or ingestion of cyanide since 2007.

The surface water monitoring has a daily frequency defined, monitoring of surface water is perform monthly and monitoring of wildlife is perform daily. The Auditor considers that these frequencies are adequate. In accordance to the environmental permit.

**5. DECOMMISSIONING:** *Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities*

Standard of Practice 5.1: *Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 5.1

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

Operation developed, documented and implemented a management procedure (RT0 354), focused on the management of the closure activities of the operation. It was evidence that the Operation updated the Operation decommissioning and closure plan, which was develop by Golder Associates (report 003.149-515-2901-00 B, dated November 2014). This updated decommissioning and closure was review during this audit. The decommissioning and closure plan mentioned at 5.1.1, clearly describe the schedule to be follow during the decommissioning and closure activities, including activities (environmental monitoring) that shall be perform after the operation closure. The Operation is plan to be closeout on 2027. Also reviewed a specific closure schedule (detailed), dated November2014, produce by the Corporate Environmental Coordination Process, based on the decommissioning and closure plan. Evidence was available in the Final Closure Plan. In accordance with internal management procedures, the decommissioning and closure plan shall be review and updated every three years. Reviewed conceptual plan was in step of revision.



## SUMMARY AUDIT REPORT

Standard of Practice 5.2: *Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 5.2

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

The Golder Associates (Report 003.149-515-2901-00 B, dated November 2014) identify the required costs related to the implementation of the plan. The total amount was included in the "reclamation cost report" (dated July/2013), which is annually updated. Reviewed values since 2009. The performance of its operations and its cash flows for the year ended that date, in accordance with accounting practices adopted in Brazil". Operation updates annually the costs related to the implementation of the decommissioning and closure plan. The necessary investments and costs related to decommissioning activities (recovery, treatment, contracting of specialized services, transportation, etc.) were calculated considering the current forecast of life of mine. Resources provision are made to assurance the necessary fund to mine closure, the Operation maintains an updated spreadsheet based in current contracts with third parties and commercial proposes obtained through formal quotation process concluded.

Reviewed reclamation cost reports – base July 2013 (Queiroz Plant). In Brazil, there is no legal requirement for approval by jurisdiction of the closure costs, excluding insurance and bond. The Operation implemented a self-guarantee mechanism. Beyond this mechanism, the Operation has also insurance certificates related to the operational risks. The Operation implemented a self-guarantee mechanism. Beyond this mechanism, the Operation has also insurance certificates related to the operational risks. Annually the Operation has its financial health audited by independent third part auditors. The last financial audit was performed by Ernst, Young & Terco, and a legally establish financial auditing company in Brazil (permit CRC-2SP015199/O-6-F-MG). Last financial audit was relate to the financial year and was Lead Auditor by Mr. Flavio de Aquino Machado, a qualified financial auditor (permit CRC/MG-065899/0-2). The financial audit was carry out in accordance with International Financial Report Standards (IRFS), which are acceptable either in Brazil and internationally. The financial audit report clearly states that the operation has enough financial health to fund the implementation of the closure plan. The financial audit report was distribute to external stakeholders such as banks, Brazilian stock exchange, Brazilian Public Financial authorities. It is also available at <[www.anglogoldashanti.com](http://www.anglogoldashanti.com)>, for public consultation.

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

**6. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.**

Standard of Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce or control them.

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 6.1

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

Operation identified and evaluated all the SHE risks associated with the cyanide and in order to have the risks under control and mitigate, the operation defined, documented and implemented specific management and operational procedures for cyanide related activities. The management and operational documented procedures in the last revisions and editions were review and verified during the audit. All the documented operational procedures address the required personnel protective equipment and pre-work inspections.

Operation maintains a definition of required PPE management and pre-use inspections that are recommend by APR tool - Preliminary analysis of mandatory risks before activity. Operation performs behavioral approaches during activities involving cyanide name "FOCO" (FOCUS). The documented operational procedures were develop by Operators & Supervisors and approved by responsible Manager. All Operators and Supervisors are trainee in the operational procedures and at least once a year the work force review the risk profile, the operational procedures and, when necessary, these ones updated. Planned job observations are also part of the Operation Management System. The work force participates effectively in the risk identification and evaluation and in the development and update of operational procedures. Verified the tool "Management Approach".

Standard of Practice 6.2: Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 6.2

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

Operation determined (operational procedure RT-0042 (last revision) that the minimum pH value shall be equal or greater than 10, 5. The pH is effectively controlled and monitored (through calibrated pHmeter, one at preparation are and two at the tank leaching area) in the Operation. Operation procedures mention the use of personal



## SUMMARY AUDIT REPORT

protective equipment (PPE) as applicable. Personal protective equipment (PPE) used brands, among them are: Disposable Clothing Tyveck, 3M Face Masks and Filters, Gloves, Helmet, Boots and other, when necessary.

Additionally, operational procedures require pre-work cyanide facilities inspections where appropriate. Operation has fixed HCN detectors in the preparation area and at the tank leaching area. The Operators also use portable calibrated HCN detectors. Both cases evidenced in the field audit. Alarm level is set around for 2ppm and 4ppm HCN.

Alarm systems are in place (first alarm level is set to 10,8pH). Verified, during the field audit, that the usual pH value is around 12. The pH is controlled through the online addition of soda solution (during NaCN solution preparation) and through the addition of Ca O solution in the first leaching tank. Operation has fixed HCN detectors in the preparation area and at the tank leaching area. The operators also use portable calibrated HCN detectors. Both cases evidenced in the field audit. Alarm level is set around for 2ppm and 4ppm HCN. Operation has fixed calibrated HCN detectors in the Cyanide Solution Preparation Area and at the tank leaching area and the Operators use portable calibrated HCN detectors. Both cases evidenced in the field audit. The pH is controlled and kept above 10, 8, avoiding the presence of HCN. Beyond these controls, all the Operators use adequate personal protective equipment (EPP). The fix and portable ones are maintain and calibrated in accordance with a Calibration Management System. Trough traceability was reviewed calibration records of HCN detectors, fixed and portables.

The signage is effective, covering the presence of cyanide, that eating, drinking and smoking is not allow and opened flames are prohibited. All the required auxiliary installations (showers, low-pressure eyewash stations and dry powder or non-acidic sodium bi-carbonate fire extinguishers) were evidenced to be in place and operational. They were test during the audit and worked properly. Operation has also implemented a system to manage all the fire extinguishers available at the plant. There are two types (CO2 for electrical installations and dry powder for the other ones) of fire extinguishers, identified through a specific number and the maintenance seals and stickers. It was evidenced the fire extinguishers master list, which is used to support the maintenance frequency. Inspections and tests showers and eyewash stations are carry out monthly Technical Work Safety. All cyanide tanks and piping are clearly paint, very well identified and the flow direction clearly showed, as evidenced in the field audit. This is a strong point in the plant.

The Operation implemented an emergency program inside the plant where all cyanide related information is available in Portuguese. This emergency program is also equipped with telephone and first aid products, which are monthly inspected. During interviewed with Operator showed good understanding about cyanide management, including first aid response. This emergency program includes the safety information related to cyanide (MSDS), first aid procedure and alarm systems. Operation has defined, documented and





## SUMMARY AUDIT REPORT

implemented a procedure to investigate and evaluate any kind of incidents or accidents. Up to now, any cyanide related incident/ accident has occurred. As a preventive action, the operation evaluates, through a periodic health examination, the content of isocyanate in the workers exposed to cyanide. All reviewed records showed that this health aspect is completely in conformance with the established acceptance criteria, confirming that the cyanide management is effective in preventing cyanide impact on the Workers' health.

Standard of Practice 6.3: *Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 6.3

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

Operation has an emergency office inside the leaching plant and a health care center, fully equipped with two resuscitator (one fix and the other mobile), two ambulances, antidote kits, telephone, radio, oxygen cylinders. These facilities were evidence in the field audit.

Operation through the Occupational Health area has been implementing the use of "Cyanokit" instead of amyl nitrite, product that is not approve by the FDA of EEUA. The first aid equipment is effectively inspect by the local Nurses in a monthly basis, including the ambulances. Evidenced was available of the inspection records. The antidotes are stored under controlled conditions, into a refrigerator and their validity is monthly checked. Operation developed specific emergency response procedures for cyanide exposures, including intoxication and first aid response. Documented cyanide related emergency plan is PL - 000004.

Operation has an ambulatory, fully equipped with oxygen, antidotes, first aid procedures, telephone, water, masks, overall and one ambulance. The ambulatory team is composed by two doctors (8h/day-5 days), five nursery technicians (24h/day-7 days), and two administrative employees (8h/day-5 days). Operation has one ambulance and qualified the local hospital (Nossa Senhora de Lourdes / Nova Lima, 10Km away from the Operation) the emergency transportation procedures are teste, at least, once a year. The local hospital facility is visit, once a year, by the Operation Doctors, in order to verify and confirm that the hospital maintains their infrastructure and to provide refresh training (cyanide first aid and emergency procedures) to the hospital team.

The Occupational Medicine area has been training the Hospital Unit for the use of "Cyanokit" instead of amyl nitrite, which is not approved by the FDA of EEUA. The last training was conduce in Jun. 2014. It was evidence that emergency drills cyanide related



## SUMMARY AUDIT REPORT

are effectively performed by the Operation, including the local clinic team in the exercises.  
Evidence - 2014 Annual Emergency Mock Drills Plan.

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

Standard of Practice 7.1: *Prepare detailed emergency response plans for potential cyanide releases.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 7.1  
 not in compliance with

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

Operation defined, documented and implemented procedures to respond to cyanide related emergencies. Evidenced Cyanide Response Plan PL-000004 (last revision), encompassing cyanide emergency scenarios related to transport, unloading and operations. The plan clearly addresses the required resources, PPEs, communication channels and telephones as well as the specific procedures for each identified scenario. Operational Process Standard detail for types of Incidents (Scenarios) and describes specifically the response for all cyanide related emergencies. Operation has an integrated drainage system, beyond the secondary containment of the cyanide tanks area. The warehouse is provide with HCN detectors and alarm systems. The Emergency Plan is share with AGR (NaCN producer) and Niquini Transportes (NaCN transporter), both ICMI recertified suppliers, for emergencies related to external NaCN transportation activities. In addition, addresses the responses related to internal NaCN transportation activities.

Standard of Practice 7.2: *Involve site personnel and stakeholders in the planning process.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 7.2  
 not in compliance with

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

Evidenced Cyanide Response Plan PL- 000004 (last revision).  
The Emergency Response Plan was develop based on the risk evaluation performed by representatives of each individual process (hydrometallurgy plant, safety coordination, environmental coordination, health coordination, among others) and was reviewed and approved by the safety manager of the operation. The emergency plan was internally communicate to the involved workforce through training sessions, including emergency drills. It was observe that before performing planned emergency drills, the Operation performs specific meetings with the stakeholders (internal and external ones) in order to review the emergency plan and plan the emergency drill. Focusing the external



## SUMMARY AUDIT REPORT

stakeholders, the operation communicates and discuss, during specific planned meetings (see Principle 9) the emergency plan to community representatives and during the emergency drill-planning meeting. The cyanide supplier, cyanide transporter, local hospital, local police and firefighters, and emergency response suppliers (WGRA – Wagner Gerenciamento de Riscos Ambientais) are involve in the emergency planning, being directly communicate about their roles in an emergency involving cyanide, and also participating in the emergency drill planning and performing, as observe in the last external emergency drill involving cyanide transportation, performed during Jun. 2014. The Emergency Response Plan was review, approved and communicated to several stakeholders (internal and external), including security and health authorities, public authorities, emergency response suppliers, community representatives. After the drills, a specific meeting involving all participants (internal and external) is conduct in order to review the emergency drill results and, when necessary, to improve the emergency plan. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated, if necessary, the emergency response plan. The emergency plan was found at revision # 10, demonstrating that the operation maintains the plan under continuous improvement.

Standard of Practice 7.3:     *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

The operation is                    in full compliance with                   Standard of Practice 7.3  
   in substantial compliance with  
   not in compliance with

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

Evidenced Cyanide related Emergency Plan PL- 000004, dated Aug/27/2014. Responsibilities and authorities are clearly define and communicate to all involved stakeholders (internal and external). The emergency committee organizational flowchart was evidence, as well as the emergency communication loop. All the below mentioned requirements are addressed at PL-000004.

Operation Safety Engineer and the Process Plant Manager are the emergency coordinators. The Process Plant Supervisor was assign to replace the process Plant Manager, when the he is not available. The Emergency Response Brigade Members are voluntary and passed through a selection process (medical, theoretical and practical), to be assigned as a brigade member. The Brigade Members were train and qualified before being assign as emergency Brigade Members. The Emergency Brigade Master list addresses all the necessary information about the Brigade Members, including contact details of internal and external stakeholders. Also reviewed the emergency communication loop. The Emergency Brigade Organizational Flowchart clearly defines the role of each member, including the Coordinators and Brigade Leaders.

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

The Emergency Response Plan identifies the required resources (hardware) that are necessary to each situation. The basic emergency response hardware is consisted of one ambulance (completely equipped and ready to be used) , auxiliary equipment (PPEs) for the Brigade Members, such as chemical / flame resistant overall, chemical gloves, oxygen masks and cylinders, chemical masks, plastic pools to be used to neutralize contaminated hardware. The AGR emergency plan covers those situations outside the Operation (during transportation), in conjunction with Niquini Transportes, both ICMI recertified. The emergency response hardware is inspect by the safety and health officers of the Operation. Records of such inspections were evidence and found in place Records of such inspections were evidence and found in place. The emergency response hardware is inspect by the safety and health officers of the Operation. Records of such inspections were evidence and found in place Records of such inspections were evidence and found in place when performing emergency drills; the operation invites specific stakeholders to participate in the drills. Another implement control is to perform periodic meetings with stakeholders, in order to discuss and updated, if necessary, the Emergency Response Plan. When performing emergency drills, the Operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated, if necessary, the Emergency Response Plan.

Standard of Practice 7.4: *Develop procedures for internal and external emergency notification and reporting.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 7.4

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

When performing emergency drills, the operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated, if necessary, the Emergency Response Plan. The emergency communication loop is clearly define and contact information is available in the plan. When performing emergency drills, the operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated, if necessary, the emergency response plan. All information related to emergencies at the operation are under the responsibility of the Corporate Communication Process.



## SUMMARY AUDIT REPORT

Standard of Practice 7.5: *Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 7.5

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

Solid briquettes are recover with the aid of cleaning devices, dispose into plastic bags return to plant, and dispose into cyanide solution tanks. The soil shall be neutralize with the aid of specific chemicals products such as hydrogen peroxide solution. Cyanide solutions are recover with the aid of specific pumps and return to the leaching process tanks. Soils shall be neutralize with the aid of specific chemicals products (hydrogen peroxide solution or Cao or soda solution (pH control). Neutralized soil is remove and disposed into plastic bags, returned to the plant and then forwarded to final disposal at a certified brown field area. Liquid bodies are monitor and no chemical products are allow to neutralize the media. Contaminated debris returns to the plant (into plastic bags) and then are forward to the final disposition at certify brown field area. Operation has the responsibility (share with the public authorities) to manage and provide drinking water to the affected stakeholders, in the event of any cyanide relate emergencies into water supply resources (rivers). Clearly, the plan states that these chemicals are not allow being use in surface water treatment. Operation Emergency Brigade does not have these kind of chemicals in their emergency response kit, as evidence in the field audit. Operation defines the required monitoring procedures to be implement in the event of soil and water potential contamination. An environmental monitoring plan is address at the Emergency Response Plan.

Standard of Practice 7.6: *Periodically evaluate response procedures and capabilities and revise them as needed.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 7.6

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

Operation defined, documented and implemented procedures to respond to cyanide related emergencies. Evidenced cyanide emergency plan PL-000004. The Emergency Response Plan was review, approved and communicated to several stakeholders (internal and external), including security and health authorities, public authorities, emergency response suppliers, community representatives. When performing emergency drills, the operation invites specific stakeholders to participate in the drills.



## SUMMARY AUDIT REPORT

Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated (if necessary) the emergency response plan). The emergency communication loop is clearly define and contact information is available in the plan. The plan is at least annually review or when necessary.

Evidenced the 2014 Annual Emergency Drill Plan. Evidenced three emergency drills perform up to date, involving NaCN leakage during unloading (wet soil), NaCN transportation in conjunction with AGR and Niquini Transportes. After each emergency drill, results are review and discussed among the participants. The opportunities of improvement raise-up during the drill are consider as corrective or preventive actions and manage adequately. Reports relate to the drills and their review were find in place.

**8. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.**

Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use.

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 8.1

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

Operation did design, document and implement an introductory training program, which is apply to all new Employees and Contractors coming to work in the Operation. The Introductory Training Program scope is focuses on general aspects of sodium cyanide, cyanide relate risks, emergencies relate to cyanide and first aid procedures relate to cyanide exposures.

The procedure Education and Training – RT - 000180 and the Annual Training Plan 2014 defines the training strategies for the personnel working in cyanide areas. Training records were find and they include cyanide hazard recognition for security, maintenance and plant personnel. Check and discuss the training plan of 2013/2014, which contains training programs / Cyanide recycling, internal rules, hours, location, number of people in the classes, distribution in relays letters shifts, achieving status as planning and evaluation learning.

In 2014, a total 109 Employees involved with cyanide were recycled.

Operation implemented a refresher-training program, which is apply for all Employees and Contractors every three years. The content of the cyanide refresher-training program is the same one of the introductory training. Records of contractor training were present as well as records of trainings held for the Employees, including training evaluation records according the procedure of documents control according Certified Integrated Management System.

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

There are training records available in Human Resources Department. Training records are kept for 20 years, according to Brazilian Legislation - Labor Law Consolidation (CLT).

Standard of Practice 8.2: *Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 8.2  
 not in compliance with

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

After the introductory training, all Employees that will work directly with cyanide (Operators, Laboratory Technicians, Maintenance Technicians, Drivers) will pass through and on the job training which consists basically on the training in operational procedures and emergency procedures (40 hours). These operational training is provided by the Operation Supervisors and Process Engineers. After the on the job training, the Employees will work under supervision during 45 days. After that, the Employee is qualified (or not) to work alone. It was found evidences of Employees training to perform for the management of operations and mixing of the cyanide, operate facilities and several production and maintenance activities.. All trainings present safety, health and environment hazards. The operational on the job training consists on the operational and emergency procedures. The training is divided in theory and practice. All the operational aspects are clearly identified in the training materials. Reviewed on the job-training program for Plant Operators, Plant Maintenance Technician and Laboratory Technician. The Auditor has evidenced that the training elements necessary for each job involving cyanide management are identified in training materials.

During the field audit, it was evidence that the Employees are aware about the cyanide related risks.

Introductory training program and refresh training program records are kept by the operation. Reviewed records related to introductory training performed along 2013 and 2014 (every 3 times a month there are introductory training sessions), for new Employees and Contractors, and refresh training records for the same period.

The training record is an assistance list with the date, instructor name, attendees name and signatures, training content and general perception about the attendees made by the instructor. During the field audit, it was evidence that the Employees are aware about the cyanide related risks.

Supervisors and Process Engineers provide operational training, during 40 hours. The on the job training is divided in several topics (depending on the function). Only after the trainee is approved in a specific topic, he is allowed to move forward to another topic. After 40 hours of operational training (theory and practice), the trainee will work, during

Lead Auditor Signature  
Julio C. M. Monteiro



## SUMMARY AUDIT REPORT

45 days, under supervision. In the ending of this period, the trainee is qualified (or not) to work in the operation. Records of such operational on the job training are keep by the operation. Introductory training approach the subject with first aid cyanide, as shown syllabus (Study Program). All new or transferred Employees have introduction training covering general and specific cyanide hazards.

There is refresher training on cyanide management provided to ensure that Employees continue to perform their jobs in a safe and environmentally protective manner.

The document Activities Plan mentions that refresh training is link to procedures and processes review. Training records were present, including Employee and Instructor names, topics cover and test records.

Standard of Practice 8.3:      *Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.*

The operation is       in full compliance with      Standard of Practice 8.3  
                                  in substantial compliance with  
                                  not in compliance with

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

Plant Operators and Maintenance Employees have collaborated to elaborate with the Operation and Emergency Response Plan. Annually, the Employees are re-trained (refresh) in these procedures. Training records for rescue team and first aid were find, including plant Operators and maintenance Employees.

The Emergency Response Brigade Members are Voluntary and passed through a selection process (medical, theoretical and practical), to be assigned as a Brigade Member. The Brigade Members were train and qualified before being assign as Emergency Brigade Members. Decontamination and first aid procedures are included in the emergency training scope.

Records of training in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary Response Equipment, to Emergency Response Coordinators and Members of Emergency Response Team, was verify by the Auditor.

All members were train in the emergency procedure PL00-0004. Before the emergency simulation, exercises the emergency plan that will be simulate is again review and discuss among the participants. Records of such briefing meetings were review. Beyond specific meetings, before an emergency drill, where external stakeholders will participate in the drill, the operation performs a specific meeting with all participants in order to review the emergency response plan that will be simulate.

Evidences were verify by the Auditor of communication with Community Members, Medical Providers, Local Hospital, and Police Officer about the elements of Emergency

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## SUMMARY AUDIT REPORT

Response Plan related to cyanide. Records, Reports and Action Plans were verify about simulated cyanide emergency drills periodically conducted for training purposes. This mock drill covers the work exposures and environmental releases. Evidenced the 2014 Annual Emergency Drill Plan. Evidenced three emergency drills perform up to date, involving NaCN leakage during unloading (wet soil), NaCN transportation in conjunction with AGR and Niquini Transportes. Operation plan and implemented an emergency response exercise calendar (2014)

The performance of the emergency responders are observe and report. In the event of any identify opportunity of improvement, corrective and / or preventive actions are define and implement, including the revision of the emergency plan (PL-000004 was find at the last revision, which means that it was update ten times since its creation.

Verified the reports made after drills that include strong performances and opportunity for improvement. The Emergency Plan define that with some deficiency are identified the procedure must to be changed. The training records is an assistance list with the date, instructor name, attendees name and signatures , training content and general perception about the attendees made by the instructor. During the field audit, it was evidence that the emergency Brigade Members are aware about the cyanide relate emergencies and associated risks.

Verified records retained documenting the cyanide training, including the names of the Employee and the Trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

### 9. DIALOGUE: Engage in public consultation and disclosure.

Standard of Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern.

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 9.1

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

Operation provide the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide through a direct telephone line (0800 7271500). This telephone line is communicate to the stakeholders through newspaper, radio advertisement, leaflets and videos during specific and program meetings with stakeholders.

All callings are record by the operation. It was evidence that this communication channel is use by the stakeholders, but none of the reviewed records was relate to cyanide concerns. The operation also designed and implemented a communication program with all the communities potentially affected by the operation aspects, based on specific and



## SUMMARY AUDIT REPORT

planned meetings. This program is called Boa Vizinhança (Good Neighborhood), where the operation and communities representatives discuss several matters, such as environmental monitoring results, cyanide management , among others subjects. Records of such meetings are maintain by the Operation and review during the audit.

Stakeholders also can communicate with the operation through specific email address <comunicação@anglogogoldashanti.com.br> that communicated to the public (internal and external) through the corporate newspaper "Entre Nós" (Between Us) for internal stakeholders. This newspaper are directly mail to the stakeholders, every two months.

Another opportunity to internal stakeholders to communicate points of concerns related to cyanide management is through the daily safety dialogues and through email.

Standard of Practice 9.2: *Initiate dialogue describing cyanide management procedures and responsively address-identified concerns.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 9.2  
 not in compliance with

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

The Operation give opportunities for the Operation to interact with stakeholders and provide them with information regarding cyanide management practices and procedures. Operation implement and maintains communication channels with stakeholders (internal & external) in order to dialogue. The "Boa Vizinhança" program is consisted by programmed meetings (quarterly) with the community representatives, were several matters are discussed. Another program is relate to the environmental monitoring with the representatives of surrounding communities. Monitoring results (surface waters and air quality) are document and communicate in the meetings with the community "Boa Vizinhangã". The Operation also distribute, every two months, specifically designed newspapers for internal stakeholders "Entre Nós". On a weekly basis, the Operation releases an internal bulletin "Em Foco" (In Focus) that is distribute weekly for internal stakeholders (Employees by email and hardcopy and Contractors only by hardcopies, which is available at the operation main entrance). The operation contact information is available in all these types of media.

Another opportunity to dialogue with stakeholders (local environmental agency - COMAD), is through programmed meetings. Records of such meetings are keep by the operation. Unplanned meetings with public authorities are also use by the Operation to dialogue with external stakeholders. Finally, the Operation training programs, focused on cyanide management, are also used to dialogue with internal stakeholders (Employees and Contractors).



## SUMMARY AUDIT REPORT

Standard of Practice 9.3: *Make appropriate operational and environmental information regarding cyanide available to stakeholders.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 9.3

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

The Good Neighbor Journal is dedicated to the external public, delivered to the community to door. In December 2014 presented the agenda of cyanide commenting on training and safety procedures adopted by the Operation. Bulletin Board and TV internal communication programs presented topics on New Provides Cyanide pain AGR business operation, Several evidences of disclosure on cyanide in 2014. Communications committee creation with monthly meetings to review the news to be disclose, (Listen to the Customer's voice) to review the topics covered, terminology balancing.

At these meetings, indicator measures by the 10th day of each month are review on the distribution of topics, seeking coverage.

The Operation launched the Torpedo - SMS, which in Minas Gerais has 590 registered numbers, but plan to significant increase this coverage. In December 2014 presented the agenda of cyanide commenting on training and safety procedures adopted by the Operation.

Communications committee creation with monthly meetings to review the news to be disclosed, (Listen to the Customer's voice) to review the topics covered, terminology balancing. At these meetings, indicator measures by the 10th day of each month are review on the distribution of topics, seeking coverage.

The Operation launched the Torpedo - SMS, which in Minas Gerais has 590 registered numbers, but plan to significant increase this coverage. Public Relationship Representatives of the community has an information (Folder) like cyanide management and hazards were distributed.

During the 3 year cycle elapsed audit no history of incidents that could jeopardize.

The following contact information is available to the public:

Email <[communication@anglogoldashanti.com.br](mailto:communication@anglogoldashanti.com.br)> (Corporate Communication)

Operation will also make information related to cyanide incidents public, through the corporate communication process, through press releases. It was evidence that the Corporate Communication Process document and implemented communication procedures with the media (newspaper and television). These communication procedures are exercised (simulation drills), at least, once a year.

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