



# ***INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE***

***Gold Mining Operations***

***Summary Audit Report Form***

***For The  
International Cyanide Management Code***

***GUALCAMAYO - MINAS ARGENTINAS***

***November 24~28, 2014***

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

Julio C. M. Monteiro

Signature Lead Auditor

## **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. The lead auditor's signature at the bottom of the attestation on page 3 must be certified by notarization or equivalent.
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)  
1200 G Street, NW, Suite 800  
Washington, DC 20005, USA**

5. The submittal must be accompanied with 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report on the Code Website, and 2) a completed Auditor Credentials Form. The letter and 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

**Name of Mine:** Gualcamayo

**Name of Mine Owner:** Yamana Gold Inc.

**Name of Mine Operator:** Minas Argentinas S.A.

**Name of Responsible Manager:** Emilio Roca – General Manager.

**Address:** Gral. Paz 558 Oeste CP(J5400ANE)

**State/Province:** San Juan

**Country:** Argentina

**Telephone:** 54-264-4299801

**Fax:** 54-264-4299799

**E-Mail:** emilio.roca@yamana.com

## Location and Description of Operation

The Gualcamayo Mine is a 100% Yamana Gold Inc. company ownership, located at 230 km northern San Juan Province, Argentina at 110 km from San José de Jáchal. Access to the operation is from the city of San Juan through national road n° 40. The camp mine is located at 1500 m above sea level, and the highest altitude of the mine operation is at 2600 m above sea level.

The area's climate is arid, with rainfall below 180 mm per year. Rains occur between November and March. Precipitation events are typical convective storms, localized and relatively high intensity.

Gualcamayo consists of three known main mineral deposits, the main QDD open pit deposit, the Amelia Ines and Magdalena (AIM) satellite open pit deposits, and the future QDD Lower West underground zone. Mineralized zones consist mainly of limestone

The exploitation has been developed by conventional open pit mining methods: drilling, blasting and transport, using trucks and loaders to extract gold-bearing ore. The waste is transported by trucks to the QDD waste dump storage area. Gualcamayo has mined over 95 million tons of material from the QDD pit, with an actual average production rate of about 135,000 tons per day.

The processing of the ore consists of the following main stages: primary and secondary crushing, a heap leach with cyanide solution, and the treatment of leachate in an adsorption-desorption-recovery (ADR) plant. Then, from the pregnant solution, cathode precipitate is obtained by electro-winning, which is melting obtaining Dore Metal bars as final product.

The process plant is designed to operate 360 days a year. The nominal daily processing rate is 25,000 tons, with an annual processing rate of 9 million tons, and annual production of 170,000 gold ounces



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The ore treatment process consists of:

- Three crushing stage: primary, secondary and tertiary crushing.
- Transportation and stacking of ore.
- Application and recovery of solution (leaching).
- Absorption of gold on activated carbon.
- Desorption of gold from activated carbon (Elution).
- Electro-winning.
- Smelting.

The ore from the mine (ROM) is initially crush in the primary crushing plant, and then it is crush in the secondary and tertiary crushing circuit, to reduce its size. The final crushed ore is transport through conveyor belts to the lixiviation pad where it is stake in panels. Lime is added to ensure the alkalinity of the ore during the leaching process and prevent the formation of hydrogen cyanide (HCN).

In the leach pad, an alkaline cyanide solution is applied to the crushed ore, to leach the gold and separate it as the solution passes through the pile. The pregnant solution (PLS) is collected in a network of pipes to a central point, where it is conducted by gravity to the ADR plant to recovery the gold. The leach pad facility is fully lined with geo-membrane and does not storage any pregnant process solution. Additionally, there is a PLS (Pregnant Leach Solution) facility that is fully lined with two geo-membranes. After the gold is recovery, the barren solution is returned to the leach pad by pumps located in the ADR plant.

The auxiliary facilities required for the mining operation include administration offices and camp buildings, laboratories, warehouse, maintenance shops, emergency facilities, electric power distribution, water supply, roads, fuel and reagent storage tanks, drainage structures, and explosive storage areas. Once the ore has been extracted and processed, all the facilities, except those necessary for continuous environmental protection, will be closed and rehabilitated.

Gualcamayo has implemented a comprehensive integrated management system of safety, occupational health, environment and community relations (SYG). Recently, the company has certified its Environmental Management System according to ISO 14001/2004 standard. The Operation has initiated the implementation process for OHSAS 18001:2007 Certification. The strategic plan is to achieve the Certification during November, 2011.

The mine is currently developing access for future underground exploitation, which is expected to begin production in the second half of 2013.



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### Auditor's Finding

This operation is

- ☒ X in full compliance
- ☐ in substantial compliance \*(see below)
- ☐ not in compliance

With the International Cyanide Management Code.

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

Audit Company: Julio Monteiro Auditores da Qualidade Ltda.

Audit Team Leader: Júlio C. M. Monteiro

E-mail: jmaq@ig.com.br

Names and Signatures of Other Auditors: -----

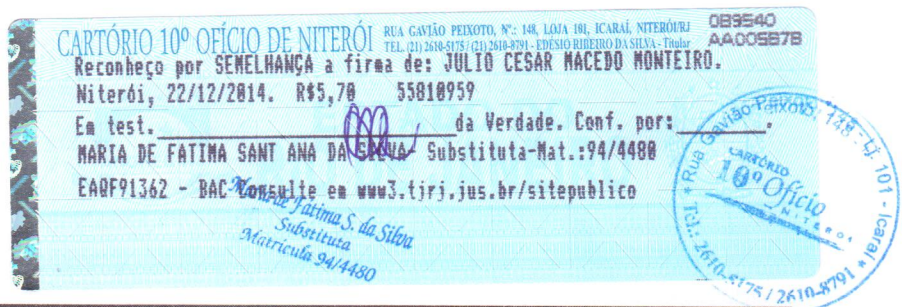
Date(s) of Audit: November, 24~28, 2014

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

Júlio César Macedo Monteiro



Gualcamayo Mine – Yamana Gold Inc

Date: November 2014

Julio C. M. Monteiro

Signature Lead Auditor

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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

Finding: The Operation is in full compliance, with Standard of Practice 1.1 according with all the evidences and documentation verified by the Auditor from the Supplier and Chain of Custody, both re certified under the Practices of the ICMI.

Yamana Supply Agreement between EI DUPONT DE NEMOURS & CO. INC and MINAS ARGENTINAS S.A. signed by Hernán Vera, President and Mario Hernandez, Vice President of Minas Argentinas S.A. and signed by DuPont Argentina Representative; require that the Cyanide must be produce at a certified facility. The Supply Agreement has valid for 5 years, since Mars 01 / 2013 at February 28 / 2018.

DuPont is responsible for the Chain of Custody since Memphis Rail Ramp to Buenos Aires Port and from Buenos Aires Port to Gualcamayo Mine trough Victor Masson Transportes Cruz del Sur also Re Certified under the ICMI in February 28 / 2014.

DuPont is recertify by the ICMI for Sodium Cyanide Production Protocol.

According Article 6 Yamana Supply Agreement between EI DUPONT DE NEMOURS & CO. INC and MINAS ARGENTINAS S.A. specifies, Sodium Cyanide supplied by the seller must be produced in a facility having a current certification under the International Cyanide Management Code.” See [www.cyanidecode.org](http://www.cyanidecode.org)

## **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  
☐ in substantial compliance with Standard of Practice 2.1  
☐ not in compliance with

Finding: The Operation is in full compliance with Standard of Practice 2.1 according the documentation of the “Yamana Supply Agreement” between EI DUPONT DE NEMOURS & CO. INC, and YAMANA GOLD INC. - MINAS ARGENTINAS S.A verify by the Auditor.



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According with Article 6 of the "Yamana Supply Agreement" between El DuPont De Nemours & CO. INC, and YAMANA GOLD INC. - MINAS ARGENTINAS S.A.

All applicable requirements of Standard of Practice 2.1, are included in ARTICLE 6 of the Supply Agreement.

*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

Finding: The Operation is in full compliance, with Standard of Practice 2.2 according to the evidence revised by the Auditor.

The transporters of sodium Cyanide are Re-Certified under The Code:

"ICMI Cyanide Code Consigner Supply Chain, Summary Audit Report, DuPont U.S. / Canada Rail & Barge Transportation Supply Chain Re-Certification Audit" - February 27, 2014; "ICMI Cyanide Code Consigner Supply Chain Summary Audit Report, DuPont Global Ocean Supply Chain Re-Certification Audit" – January 30, 2014.

In Argentina: "Victor Masson Transportes Cruz del Sur S.A." is Re-Certified under the ICMI Standards. Date of Re-Certification: February 28, 2014, and "DuPont Supply Chain in Argentina" is Re-Certified under the ICMI Standards. Re-Certification date: February 27, 2014

The "Chain of Custody Letter for Yamana Gualcamayo", concluded that the Supply Chain from Manufacture to Mina Gualcamayo – Argentina is in Full Compliance with the Cyanide Code, as per the ICMI's guidance to auditors, for sections 1 & 2 of the Mining Protocol.

Additionally, Gualcamayo has the following documents related to the safety of transport for sodium Cyanide that was revise by the Auditor:

- "Updating the Study Tour for Road Transport Solid Sodium Cyanide (ONU 1689)", report prepare by DGM Dangerous Goods Management Argentina S.R.L. to Gualcamayo Project.

- "Transport Contingency Plan for Customers in DuPont Argentina" - Code: DUP-ARG-012 - October 2013 Version "Anexo Plan De Contingencias del Transporte para Yamana Gualcamayo". Code: DUP-ARG-012 - Version October 2013

- "Procedure for Land Transport of sodium cyanide From Buenos Aires to Puerto Yamana Gualcamayo Mining Company." Code: DUP-ARG-005, Version 0012

<http://www.cyanidecode.org>



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### **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

Finding: The Operation is in full compliance with Standard of Practice 3.1

Basis for the finding: Consider the responses to questions 1, 2, 5 & 7 under Standard of Practice 4.7 and all questions under Standard of Practice 4.8 as they pertain to unloading, storage.

The Mining Authorities approved the Environmental Impact Study of Gualcamayo - prepared by Knight Piésold Consulting in 2006 and August 2007. Updates of the I.I.A. are present to the Mining Authorities every two years.

The facilities were design according with solid international engineering practices. The engineering company was HATCH that supplies engineering, project and construction management services, process and business consulting and operational services to the mining, metallurgical, energy and infrastructure industries (a Canadian internationally recognized and qualified company, with expertise and experience in many mine projects. [www.hatch.com](http://www.hatch.com)

The Hatch scope of services for the Gualcamayo Project included detailed engineering and assistance to procurement.

The design was conduct according to the following Hatch Criteria Design documents that were revise during the audit.

The engineering design obeyed the last editions of the following associations: AISI, ANSI, API, ASME, ASTM, AWS, AWWA, HI, DIN, ISO, and MSS.

Additionally, during construction, the company implemented a QA/QC department. All QA/QC records are keep in a file area near the ADR plant. The auditor could verify evidence of such controls. The solid Cyanide storage is located far away from human settlements, communities and surface waters. However, the Operation carry out hydrogen Cyanide monitoring with both, fixed and portable detectors equipped with visual and audible alarms, to verify the hydrogen Cyanide gas concentration and reduce risks to Workers. All the Cyanide storage, ADR plant and process tanks are located on a concrete surface that was construct following the design criteria, besides the Operation is hiring a contractor company specialized in floor epoxy sealing to avoid infiltration. The contractor is PAC Distribuciones S.R.L.

Operation has level calibrate indicators allow monitoring the level of cyanide solution preparation and storage tanks, both locally and remotely (from control room). It also has high-level alarms and high level with an interlock to pumps that drive the cyanide solution.



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The secondary containments for Cyanide storage and mixing tanks were constructed of concrete. The Operation has a very well designed and constructed sodium Cyanide warehouse area, with adequate ventilation. Under a roof and walls, locked doors, and with no public access. However, the Operation carries out hydrogen Cyanide monitoring with fixed and portable detectors equipped with visual and audible alarms, to verify the hydrogen Cyanide gas concentration is within the safety concentration range before any access to the building. This warehouse is used only for the storage of sodium Cyanide boxes, and is far away from other incompatible substances and is separate of incompatible materials such as acids, strong oxidizers and explosives and apart from foods, animal feeds and tobacco products with berms, bunds, walls or other appropriate barriers that will prevent mixing.

*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

Finding: The Operation is in full compliance, with Standard of Practice 3.2, considering the responses to questions 1, 3 & 6-8 under Standard of Practice 4.1, and question 3 under Standard of Practice 4.7 as they pertain to unloading, storage and mixing of Cyanide. The Standard Operating Procedure POPE-PRO-011 "Preparation of Cyanide Solution" was thoroughly checked during the audit and was considered satisfactory to all requirements of this standard (3.2).

The empty bags of Cyanide are rinsed three times with fresh water, ensuring they are free of Cyanide before being sent to a hazardous waste temporary storage area. Boxes, cartons, and decontaminated bags, are placed in containers in an area of temporary hazardous waste storage, with restricted access within the area of the plant. Containers are removed by an authorized company to treat hazardous waste that transports them to the city of San Juan to a legally authorized treatment plant of hazardous waste. Operation does not return any Cyanide container to the vendor.

The evidence of implementation was verified through observation of Employees performing these tasks, and field interviews with personnel responsible for them. The conclusion was that all interviewed people have knowledge of their tasks and associated risks during cyanide operations. The Personal Protective Equipment was appropriate for the tasks. The preparation is ever done by two operators, additionally the Operation has a CCTV (Close Circuit Television) being monitored from the Control Room all the time.



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### **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  
☐ in substantial compliance with Standard of Practice 4.1  
☐ not in compliance with

Finding: The Operation is in full compliance with Standard of Practice 4.1 Considering too, the responses to questions 1, 3 & 6-8 as they apply to unloading, storage and mixing tanks and pipelines and includes them in the finding section of the Verification Protocol for Standard of Practice 3.2.

Operation has development Standard Operating Procedures for unloading, mixing and storage facilities, heap leach operations, and disposal.

Additionally, during construction, the company implemented a QA/QC department. All QA/QC records are keep in a file area near the ADR plant. The auditor could verify evidence of such controls.

Operation has been ISO 14001:2004 recertified in November 20, 2014 by Intertek. The Certificate number is #0016532-00 with accreditation of ANAB.

The Operation has developed Operative Procedures and an Emergency Response Plan: PES 09-00-3.6-002 "Preparedness and Emergency Response" to assure an appropriate response in case of any contingency including Cyanide gas release and other scenarios according to standard of practice 7.1 of the Audit Protocol.

The Maintenance Plan was recheck as well as the Inspections Program. Both are according with the requirements of this standard of practice.

Operation has implemented a change management procedure within its Safety Management System: PES 09 00 3.5 005 "Management of Change". The types of activities subject to this procedure are changes in Process, Systems, Equipment, Procedures, Layout, Facilities, Materials, Organizational Structure, and Others. During the audit changes management process were verify design and construction of the Leach Pad - North Valley (Valle Norte).

It was evident that the Operation performs inspections in a monthly basis. The inspection includes tanks, pipes, valves, parapets, sensors, emergency showers, hydrocyanic gas sensors, power generators, others.

The Inspection Plan is properly conducted on established frequencies and it is sufficient to ensure that the Operation is functioning within designed parameters.

The Operation hired the contractor company A-EVANGELISTA S.A., for the execution of inspection, thickness measurement, and hydraulic test of containers, pipes and air accumulators. The last inspection was carried out between February and March 2014.



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There are inspections in place of secondary containments integrity; leach pads and ponds facilities according with design documentation; pipelines, pumps, valves to prevent leakage; integrity of surface water diversions.

The Operation keeps records of inspections done, as well as date of inspection and name and signature of the inspector. The deficiencies observed are appointed in the records, and action plans are established.

The Operation is ISO 14001 and OHSAS 18001 Management System Certified, which guarantee the retention of documents and records.

The Operation has implemented a back-up emergency power generating equipment that is maintained and tested in a regular basis. This emergency power system, is connected to the critical equipment identified that need to be running for preventing any release to the environment in case of a prolonged power outage.

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 Standard of Practice 4.2  
☐ not in compliance with

Finding: The Operation is considered to be in full compliance due to this Standard of Practice not being applicable.

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 Standard of Practice 4.3  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 4.3 according with evidences available that show the compliance with the requirements of this standard. Operation has a probabilistic water balance point 4.7 of "Informe Final Sistema de Lixiviación" Proyecto n° 06.6622.02 prepared by Vector for Gualcamayo – Minas Argentinas S.A. Mayo 10, 2007. It considers the impact of a 500 years storm event of 24 hours of duration and 54 mm of rain. A simulation period of 123 months, that considers evaporation of the lixiviation pile and ADR tanks, climate data, among other data. There is not freezing



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potential at Gualcamayo Plant. The facility was design to withstand 80 hours without retro-pumping solution to the Pads before the contingency pool overflows. According with requirements of "POMMyC". Operation has two ponds: The PLS and the Contingency ponds. The PLS and Contingency ponds are connected through a collector system that avoid overtopping of the PLS. Nevertheless, these ponds are inspect in a weekly basis by Process Plant Operators and Supervisors. They perform a visual inspection of liner structural integrity, drainages, presence of wildlife, the integrity of safety nets that prevent the entry of wildlife, and they test the solution return pumps. Operation has weather station that are equipped with a precipitation device. One of the weather stations is located close to the lixiviation pile.

Records are keep in the environmental department of the company and report to process plant area in a regular basis.

*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

Finding: The Operation is in full compliance with Standard of Practice 4.4 according with evidences available that show the compliance with the requirements of this standard. Operation has implemented measures to restrict access by wildlife and livestock to all open waters. Especially the PLS solution pond were the auditor verified a net covering the entire pond and it is in good condition of integrity. The ADR process plant is fenced around the area.

The entire process was design to avoid any open water areas. The only pond that can contain Cyanide solution - over 50 ppm WAD - is the PLS pond that is covered with a net. This net prevents wildlife mortality. Operation does not pump any barren solution from an open pool; for this propose, the Operation has a 600 m3 concrete tank (TK01) that storages barren solution for pumping back to the lixiviation piles. This concrete tank is protect, in his top side, with a net to avoid wildlife mortality. The Auditor verified no pounding presence at the surface of the Lixiviation Pad. The entire process was design to avoid any open water areas. The only pond that can contain Cyanide solution over 50 ppm WAD is the PLS pond that is covered with a net as described in point 4.4.1. The solution is applied trough a drip irrigation system. The operators verify frequently if any significant pounding are forming. In that case, there is a procedure in place to correct this effect. During the audit, the lixiviation pile was revise and was no evidence of any pounding.



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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  
☐ in substantial compliance with Standard of Practice 4.5  
☐ not in compliance with

Finding: The Operation is in full compliance with Standard of Practice 4.5 according with evidences available that showed the compliance with the requirements of this standard. Gualcamayo Operation does not have any direct discharge to surface water.

Operation does not have indirect discharge to surface. There is a monitoring system in place to verify if there are any leaks under the Lixiviation Pile and PLS pound. The monitoring is done according to POMMyC.

There is a river that is located away of the Lixiviation Pile and ADR Plant; however, the Operation carries out environmental monitoring of this superficial water, which includes Cyanide measurements (free, WAD and Total Cyanide). The auditor verified the records of this monitoring and noted that there is no Cyanide concentration in that water.

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 Standard of Practice 4.6  
☐ not in compliance with

Finding: The Operation is in full compliance with Standard of Practice 4.6 according with evidences available that show the compliance with the requirements of this standard.

Operation does not have any TSF facility. Operation also does not have indirect discharge to underground or surface water. There is a monitoring system in place to verify if there are any leaks under the lixiviation pile and PLS pound. The monitoring done according to POMMyC.

There are five Piezometers installed according with POMMyC, and two additional Piezometers were constructed upstream and downstream of the Valle Norte Lixiviation Pad. Additionally there are two deep-water monitoring wells, upstream and downstream the lixiviation and process area (approximately 200 meters depth) that contacts underground water. These wells are monitor in a regular basis and there has been no detection of any Cyanide concentration since the beginning of production. There is no ground water beneficial use downstream of the Mine; however, the Operation has an extensive underground monitoring plan that considers determination of Cyanide (free, WAD and Total) concentration. There has been no detection of any Cyanide concentration since the beginning of production.



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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

Finding: The Operation is in full compliance with Standard of Practice 4.7. Considering too, the responses to questions 1, 2, 5 & 7 as they apply to unloading storage and mixing tanks, pipelines, and include the, in the finding section of the Verification Protocol for Standard of Practice 3.1.

Consider the response to question three as it applies to Cyanide unloading, storage and mixing tanks and pipelines and include it in the finding section of the Verification Protocol for Standard of Practice 3.2.

All Cyanide unloading, storage, mixing and process solution tanks have containment measures as per project documents and visual inspections done by the Auditor. Secondary containments for Cyanide tanks and other facilities are design to contain at least 110% of the major tank volume. This was verified trough drawings and visual inspections.

The system has been designed with sumps and dedicated pumps and piping to return all water to the production process.

The Operation's floor pumps are equipped with level sensors that turn on automatically the pumps. It also has the option of being operate manually, according to the procedure: POPE-PRO-002 "Plant startup after emergency stop". All tanks containing Cyanide solution or any other dangerous substance have secondary containment. However, the Operation has procedures in place to remediate any contaminated soil to avoid adverse impacts. Operation has a Preventive Maintenance Plan. There are also visual inspection to detect any potentially damage to the structure of pipelines, tanks and secondary containments.

The pipelines and tanks are constructed of material compatible with cyanide and high pH conditions specified in the following documents.

H326552-MAS01-100-P-TS-001 "Piping Materials Specifications"

H326552-MAS01-100-P-DC-001 "Piping design Criteria"

It was taken a sample of a pipeline of concentrated Sodium Cyanide solution and was verified the class of material (ASTM A53 Gr.B) that is appropriate for this kind of caustic Cyanide solution. Also were verified ADR drawings. Specially as Built Process Area Piping Plan n° 07-11,480-701 issued by Scotia International of Nevada (SION) for Gualcamayo Project

All pipelines connecting the Lixiviation Pile, the ADR Plant, PLS Pound and Contingency Pound are lined with HDPE trough all its extension to collect any leaks. In case of contingency, the collected leaks would flow through a membrane covered ditch to the PLS and then to the Contingency pond. There are not superficial waters near the Cyanide facilities.



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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 Standard of Practice 4.8  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 4.8. The Auditor was consider the responses to all questions as they apply to unloading, storage and mixing tanks and pipelines in the finding section of the Verification Protocol for Standard of Practice 3.1. The new facilities were built and test in a control and quality assurance program. During the audit was showing the existing documentation and records of such controls. The Auditor verified QA/QC documentation of the construction of the Valle Norte Lixiviation Pad. The QA/QC program and the records reviewed and verified during the audit show that the materials are correct according to design specifications, the compaction has been adequate, the bases and foundations of the tanks are suitable, membranes are appropriate and have been placed according to design and assembly specifications. Records QA/QC is maintained and available in a specific file located at the office of the Project Manager. During the construction, skilled personnel (Knight-Piésold Consulting) reviewed the facilities and the work done. All records are in a file located at the office of the Project Manager. The Operation has also drawings and approvals for construction. The Operation has plans "as built" of Cyanide facilities approved by the authority. Some of these plans were check by sampling during the audit

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 Standard of Practice 4.9  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 4.9 according with evidences available that showed the compliance with the requirements of this standard. Operation has written procedures and monitoring programs. During the audit were reviewed the Procedure PSSA-MAB-009 "Monitoring of surface and groundwater water and "Environmental Monitoring Program". The sampling and analytical protocols were developed by qualify personnel before the start of sampling activities and approved by the Enforcement Authority. These protocols were perform according to international standards such as "Standard Methods for the Examination of Water and Wastewater". The procedures indicate sampling location, date to be take, method of preservation, chain of custody, instructions for shipment to the



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laboratory. The laboratory analyzes Free, WAD, and Total Cyanide. The Operation has hired an independent laboratory called "INDUSER": [www.induser.com.ar](http://www.induser.com.ar), which was elect for their technical qualifications. All these data are record in the "Field Sheet". Operation does not make any discharges of process waters or other effluent to watercourse. The gold recovery system is a closed recirculation loop. However, the Operation carries out monitoring of surface and groundwater according to the Environmental Monitoring Plan. Operation has hired a consulting company (Scudelati & Asociados SRL) for wildlife monitoring, who performs two annual campaigns. Since the start of operations, there has been no evidence of wildlife mortality due to Cyanide. It was finding that the consulting company has the appropriate authorizations and qualified personnel to do such studies. Information about the company can be finding at [www.scudelati.com.ar](http://www.scudelati.com.ar). Verified report FA 005/14 April 30, 2014 "Fauna Monitoring Campaign 05-2014". No wildlife mortality detected. All monitoring done according to the characteristics of the monitored medium and the frequencies are set in the Environmental Monitoring Program.

It was evident that the last three monitoring of water been made on the stipulated dates.

Surface water is monitored in a weekly basis (cyanide is measured in all samples)

Groundwater is monitored in a monthly basis (cyanide is measured in all samples)

Wildlife mortality observations is monitored twice a year (made by an external qualified consultant company), and operators reports any circumstances or findings related to fauna to the Environmental Department.

After the revision of the monitoring data and plans and according to my professional opinion, the monitoring frequencies applied in the Operation are adequate to identify changes in a timely manner.

**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 Standard of Practice 5.1  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 5.1 according with evidences available that show the compliance with the requirements of this standard.

Operation has developed a complete "Conceptual Closure Plan" in September 2010. This plan was develop with the company Knight-Piésold Consulting, who has the qualifications and experience appropriate for the development of such activities. The Auditor verified the update report that is being conducting by Knight-Piésold Consulting. Ref. Nr. ME202-00124-21-01-INF-B:"Conceptual Closure Plan Update". The Conceptual Closure Plan includes a



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schedule for closure activities. Conceptual Closure Plan includes periodic reviews. The detailed closure plan will be conducted two years before the planned closure of the facilities according to regulatory requirements of the Province of San Juan and the Argentina Country.

*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 Standard of Practice 5.2  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 5.2, according with the evidence presented and revised during the audit.

The costs were estimated using third-party costs provided by the consultant company Knight-Piésold, which was specially contracted to perform this job. The costs were determined by Knight Piésold using the referential data base information that they have, and apply to perform the entire necessary tasks related with the closure activities.

Included in the Conceptual Closure Plan, there is a complete list describing all tasks and the referential unitary costs used to the estimation. According to Yamana Gold requirements, updates of closure costs are conducted quarterly and sent to Corporate. In case of any modification or construction of new facilities or expansions, the costs are updated. The jurisdiction has not established mechanisms to cover costs associated with decommissioning and closure of Cyanide related facilities. Operation has not established mechanisms to cover closure costs.

Qualified external Auditors (Deloitte) have audited the estimate cost of Conceptual Closure Plan. [www.deloitte.com](http://www.deloitte.com). The Operation maintains a certification signed by Lic. Norberto Manzino, Contador Público, graduate at "Universidad de Buenos Aires", License number 1520 from "Consejo Profesional de Ciencias Económicas de la Provincia de San Juan".

Financial methodology used includes the assessment of recognition of the Asset of Retirement Obligation liability in the period it was incurred, such as at acquisition or construction. The liability equals the present value of the expected cost of retirement/remediation. An asset equal to the initial liability is added to the Balance Sheet, and depreciated over the life of the asset. The result is an increase in both assets and liabilities.

For the recognition and recording of the present value, the discounted cash flow (DCF) analysis was a method of valuing the retirement obligation asset using the concepts of the time value of money. All future cash flows are estimated and discounted to give their present values (PVs) — the sum of all future cash flows, both incoming and outgoing, is the net present value (NPV), which is taken as the value or price of the cash flows in question.



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### **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 Standard of Practice 6.1  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 6.1 according with evidences available that show the compliance with the requirements of this standard.

The Operation was design and implemented procedures that describe the activities related to Cyanide. Operation procedures mention the use of personal protective equipment (PPE) as applicable. Personal protective equipment (PPE) used brands are approve by IRAM (Argentina Legislation), among them are Disposable Clothing Tyveck of DuPont, 3M Face Masks and Filters, Gloves MAPA, MSA V- Guard Helmet, Boots Pampero).

Additionally, Gualcamayo operational procedures require pre-work cyanide facilities inspections where appropriate (e.g., before make-up solution preparation "POPE-PRO-011").

Operation has implemented a change management procedure within its Safety Management System: PES 09 00 3.5 005 "Gerenciamiento de Cambios" (Change Management). The Operation takes into account the views of Operators to develop procedures. The tools for Workers to provide their views are diverse and were verify during the audit. It allows making suggestions for improvement.

Through the involvement of operational, staff in the SGI implementation meetings (Integrated Management System). Sub-committee meetings in accordance with the PES 09 00 3.1 002 "SHE Committee"

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 Standard of Practice 6.2  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 6.2 according all the documented evidences showed and evaluated by the Auditor. Interviews with Operators were making too.

The facilities are operating at pH 10, 5 +- 0, 5. The pH is monitoring according to the following procedures:



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The pH is monitor by analysis of rich and poor solutions, and by doing specific analysis in five predetermined points with a frequency of 2 hours. The pH is maintained by the addition of lime to the ore stored in the piles (during the stacking). The Operation has on-line pH meters that are monitor from the Control Room. During handling of Cyanide boxes in the warehouse, the use of Cyanide detectors is mandatory, according to POPE PRO 011"Preparación de Solución Cianurada" and ABA PADM 001" Traslado, Descarga y Almacenamiento de NaCN" . The Operation has identified areas and activities where workers may be expose to Cyanide as Make-Up area required the mandatory use of appropriate personal protective equipment (PPE). The Operators has portable equipment to monitor Cyanide gas. The instruments are properly calibrated by a contractor, hired especially for this service. During the audit was show that calibrations records are keep in the area of process plant. Operation has warning signs placed in all areas where Cyanide is stored or handled on site, and at temporary storage of waste Cyanide packaging that has been previously decontaminated. Signs prohibiting smoking, open flames, eating and drinking, and use of specific PPE also were in place. Color code placard and inspection color codes.

Safety showers are installing in strategic areas according to risks associated to cyanide manipulation as: make-up area, carbon columns, ADR area, smelting house and labs. All of them where working properly. It was evident that The Operation has a weekly inspections program to ensure safety showers operability.

Portable dry chemical powder fire extinguishers are installing and are control through monthly inspections. The inspection records are kept in the Process area. Operation has developed a standard for color-coding: PES-09-02 3.5-021 "Código de Colores". During the audit was verified that the Operation is repainting the facilities.

All workers are training to be aware of the meaning of the color-coding applied in the Operation, to identify cyanide presence and other potentially dangerous solutions in tanks and pipelines. The training made during the safety induction process and trough special operational trainings done at the process area. Additionally, there are color-coding boards located at the Process Plant and at the main offices, showing the different colors according to the Operation's standard.

MSDS are located at places where Sodium Cyanide is manipulated. Evidences were finding in the Make-up area, in the Sodium Cyanide warehouse, in the Laboratory, and in the ADR's Control Room. The MSDS are available from DuPont in Spanish language and are the latest version. First aid kits for Cyanide poisoning, has the instructions in Spanish and reviewed weekly by the Medical Service. The Operation investigates all incidents as required by the standard PES 09 00 04.02 001 "Accident Analysis and Investigation". After the investigation, it is determined the immediate and basic causes, and actions to prevent recurrence of deviations are implemented.

It has also developed a "Hazard Identification Matrix and Risk Assessment" whose controls are reviewed periodically or when there are changes and/or incidents.

Yamana Corporate has implemented a comprehensive program of corporate cross audits, during which it is assess whether programs and procedures in place are effective. Including in these audits are Cyanide Management Code requirements evaluated.



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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 Standard of Practice 6.3  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 6.3 according to all the documented evidences as showed and evaluated by the Auditor. Interviews were make too with the Operators.

Operation has enough water, oxygen, rescuers, antidotes, radios, telephones, satellital telephones, and alarms for emergencies. During the audit, the intervention kits were verified at Process Plant and Laboratory (amyl nitrite vials, oxygen, respirators, resuscitator, gauze, and latex gloves). The plant has an alarm system also. The emergency is triggered according to the last revision of the PES 09 00 3.6 002 "Preparación y Respuesta a Emergencias". Operation has a weekly inspection program conducted by the internal Medical Service. Antidotes are maintaining according to manufacturer's recommendations and replaced according to their recommendations.

Amyl Nitrite antidotes are stored in special boxes in temperature control rooms (e.g. at the Process Plant Control Room, where there temperature is controlled and maintained in 23° Celsius). Additionally, the Operation has installed thermometers to monitoring the antidotes temperature inside the boxes that contains the Kits. Operation has developed a comprehensive Plan: PES 09 00 3.6 - 002 "Emergency Preparedness and Response." This plan includes specific procedures to respond to any incidents involving Cyanide. Operation has a "Micro Hospital" with all the equipment and infrastructure necessary to respond in case of Cyanide poisoning. Two Doctors are permanently available. The Operation has tree ambulances equipped as Intensive Care Unit. The Auditor interviewed the Medical Director and checked the training records. The Operation has Medical Staff and enough material resources and medicines to deal with, in cases of Cyanide poisoning. For this reason, it is not necessary to transfer any patient to another Medical Center.

Operation performs drills. The programs are document in the "2014 Emergency Drills Program". After each drill, it is performed an evaluation according to PES 09-00-3.6- 002 "Emergency Preparedness and Response", ANNEX VI "Assessment Report of the Emergency Response Plan and Drills".



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### **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

Finding: Operation is in full compliance with Standard of Practice 7.1 according to all the documented evidences as showed and evaluated by the Auditor. Interviews were making too with the Operators.

The Operation has developed a comprehensive plan to deal with emergencies: PES 09 00 3.6 002 "Emergency Preparedness and Response", last revision which takes into account the possible scenarios related to Cyanide releases. Operation has considered the transport routes, the physical and chemical characteristics of Cyanide (solid), the method of transportation, road conditions and characteristics of the trucks. All this are include in:

"Estudio de Rutas para el Transporte Carretero de Cianuro de Sódio Sólido para Proyecto Gualcamayo" (July 2008), Updated October 2013.

DuPont "Procedimiento de transporte" Nov. 2007; Apéndice 3.3B, "Plan de contingencias del transporte para Minas Argentinas S.A. Mina Gualcamayo, Rev. Octubre 2013; PES 09 00 3.6 002 "Preparación y Respuesta a Emergencias" Anexo III punto 3.1.

The Plan describes specific actions to respond to the emergency as following: Evacuation, first aid measures, spill control and containment at source, assessment, mitigation and prevention.

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

Finding: Operation is in full compliance with Standard of Practice 7.2 according all the documented evidences as showed and evaluated by the Auditor. Interviews were make too with the Operators.

The planning process has involved operation Workers according to PES 09 00 3.6-002 "Emergency Preparedness and Response" point 3.



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There is no nearby communities approximately the Operation or downstream of it, which should react to a leak. It was no necessary to involve external stakeholders in the planning process response.

There is no significant possibility of affecting any Community due to Cyanide releases from the Operation. The only potential scenery is to have an accident during the transportation of solid Cyanide.

The Operation communicates the risks of Cyanide and how to act in case of an emergency by handing over the "Manual of Information for the Community" and through social programs of Community Relations that are led by the VP Mario Hernández.

The Emergency Preparation and Response procedure of the Operation does not provide specific functions to outsiders responders. Internal Medical Service is responsible for dealing with poisoning cases at Mine site.

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

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

Finding: Operation is in full compliance with Standard of Practice 7.3 according all the documented evidences as showed and evaluated by the Auditor. Interviews were make too with the Operators.

According to last revision PES 09 00 3.6 002 "Preparación y Respuesta a Emergencias", point 8.4 in the last revision. The Plan mentions that in the absence of the Head of Emergency, the squad leader on duty assumes that role designate primary and alternate emergency response coordinators who have explicit authority to commit the resources necessary to implement the Plan. According to PES 09 00 3.6 002 "Preparación y Respuesta a Emergencias". In the Annex II of the Emergency Plan, there is an organizational chart that identifies four brigade groups one for each shift. In the Emergency Brigade, office there is maintain a current listing of each team. Operation, maintains a training plan for Members of the Emergency Brigade, which is appropriate for each of the scenarios. These training include training in emergency response to hazardous materials.

The Emergency Brigade Chief carried out a training of Response to Dangerous Materials Emergencies at the Texas University Centre (TEEX).

The Emergency Plan includes contact numbers of Brigade Chief, Safety Manager and Leader of Brigade. At the port property the security guards has a current listing of the brigade, with the details of the rooms occupied by each one in the camp, in order to locate them quickly in case of emergencies. The Plan identifies the duties and responsibilities of Head of Emergency, Brigade Leader, Brigade Members, Medical Service, Security Service, the Advisory Group and staff not directly involved with the response. The Emergency Plan has a detailed list of all the material equipment and personal protective equipment, which includes among others: clothing for fire intervention, equipment for rescue at heights,



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underground rescue, and intervention in hazardous materials, support equipment and emergency vehicles.

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 Standard of Practice 7.4  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 7.4 according all the documented evidences as showed and evaluated by the Auditor. Interviews were making too with the Operators.

Phones and contact agencies are detailed in PES 09 03.06 002 "Emergency Preparedness and Response". In addition, the Operation has a standard for crisis management PES 09 00 3.6 001 "Crisis Management". The Emergency Plan includes the telephone number of the Communications Coordinator of the operation, who maintains the list of contacts with the media. The plan includes contact numbers and procedures for notifying potentially affected communities. PES 09 00 3.6 002 "Emergency Preparedness and Response"

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 Standard of Practice 7.5  
☐ not in compliance with

The Operation has procedures in place that describes specific remediation measures in case of Cyanide release scenarios such as recovery, neutralization, decontamination of soils and other contaminated media, management of spills clean-up debris according to the following documents:

PES 09 00 3.6 002 Preparación y Respuesta a Emergencias Anexo III, Point 2.2: Derrames de Cianuro (Cyanide Leaks);  
POMMyC (Plan de Operaciones para el Monitoreo Mantenimiento y Contingencia)  
POPE PRO 017; "Control de Derrames de Cianuro en Planta".

In these documents it is mentioned that in case of spills of cyanide, it should be contained, neutralized, absorbed and removed the affected soil for both liquid solutions and for solid cyanide as well as the specific measures to decontaminate soils and/or other contaminated media and how to do the final disposal of waste after cleaning.



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The procedures in place prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and Hydrogen Peroxide to treat Cyanide that has been released into surface water; additionally the procedures address the need for environmental monitoring to identify the extent and effects of a Cyanide release. The procedures include sampling methodologies and parameters.

Finding: Operation is in full compliance with Standard of Practice 7.5 according all the documented evidences as showed and evaluated by the Auditor. Interviews were made too with the Operators and verified the last revisions of documents.

*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

Finding: Operation is in full compliance with Standard of Practice 7.6 according all the documented evidences as showed and evaluated by the Auditor. Interviews were made too with the Operators.

Annually the Operation reviews and evaluates its emergency plan PES 09 00 3.6 002 "Emergency Preparedness and Response".

The Emergency Plan is also reviewed when any of the following conditions: New projects, modifications and / or changes in processes, incorporation of new hazardous materials, identification of new environmental aspects, as a result of the analysis of emergencies and/or drills, hazard identification and risk assessments revision, or/and after events. Operation performs periodic drills according the following documents: PES 09 00 3.6 002 "Preparación y Respuesta a Emergencias", point 15 Programas del SGI: "Plan de Simulacros"; "Informes de Evaluación del Plan de Respuesta de Emergencia y Simulacros". Drills directly related to cyanide emergencies are performing 3 times a year, according to the Drill Plan.



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### **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 Standard of Practice 8.1  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 8.1 according all the documented and records evidences as showed and evaluated by the Auditor. Interviews were making too with the Operators.

All personnel who work with Cyanide or may encounter Cyanide are trained according to PES 09 00 3.2 004 "Gerenciamiento de Competencias" in the last revision. The Operation periodically made refreshing training to all personnel that may encounter cyanide.

There was evidence that the Operation coordinated with DuPont (Rodrigo Eduardo Gonzalez), a Cyanide refreshing training called "Train the Trainer" (which had already been dictated last year) for supervisors and key personnel who handling and operate Cyanide products or solutions. The auditor confirmed that this training was dictate on October 2014.

The Supervisors and key personnel that received the "Train the Trainer" course presents training and refresh training to the Operators that may encounter cyanide during their activities. The refresh training done within the plan of re-training of staff "Safe handling of cyanide". Training records are retaining by the Operation. At the process Plant records are kept for their staff. The Head of the Emergency Brigade keep records of training of the brigade, as well as drills. The Occupational Physician retains training records of the Medical Services in that area. In addition, the Safety and Environmental Department retains the Induction Training records.

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

Finding: Operation is in full compliance with Standard of Practice 8.2 according all the documented and records evidences as showed and evaluated by the Auditor. Interviews were making too with the Operators.

The Operation has developed a complete system of hazard identification and risk assessment, which include the risks associated with Cyanide. The Operation has developed operational controls for all identified risks and Operating Procedures have been writ. All Workers are training in operational procedures, especially in how to safe carry out their activities. Verify: PES 09 02 2.1 004 "Identificación de Peligros y Evaluación de Riesgos



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SSO". During the field audit, were interviewed Operators who participated in preparation of Cyanide and verified that they have been training and know how to do their jobs safe. The Auditor also checked the training records of these people.

Operation has developed a Training Matrix, which has three important priorities:

- Training Critical;
- Mandatory Training;
- Training Routine.

For all Workers have been identified the necessary training they need to receive to perform their duties properly. During the audit was verified the Training Matrix at the Process area, and during personal interview with HR Training and Development Supervisor. Register R-PES-09 00 3.2-004-1 "Training Matrix".

The Operation has a PowerPoint presentation for training on Cyanide that has been developed by DuPont. It also has a video explaining how to act in case of poisoning and how to administer Amyl Nitrite. All Workers (including Contractors) who will carry out activities related to Cyanide - or in areas of Cyanide - receive training specific induction of Cyanide before commencing their activities. All training on Cyanide is dictated by personnel who have received the course "Train the Trainer" from DuPont, and it is dictated by experienced personnel in working with Cyanide. The Trainers conducted refresher training on this course. All Employees - including Contractors - are training before starting work. Operation has a Matrix of the necessary training for each worker and determines the frequency of refreshing training that should receive every Employee. The effectiveness of the training is verified by the Supervisor, observing the tasks performed, and through the Yamana Corporate Tool "Safety Interactions". All records are kept by the Operation. The records include the name of the person trained, trainer's name, date of training and / topics that were discussed. During the audit, it was shown, during workers interviews, that they have received the training.

*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  
☐ in substantial compliance with Standard of Practice 8.3  
☐ not in compliance with

Finding: Operation is in full compliance with Standard of Practice 8.3 according to all the documented and recorded evidences as shown and evaluated by the Auditor. Interviews were made too with the Operators.

All personnel in connection with such activities have been training in emergency response and how to act in case of poisoning. Routine drills are conducted according to the scenarios identified in the Emergency Plan 7.1.2 according to the protocol of ICMI. All Staff of the Emergency Brigade is training in appropriate procedures to respond to different scenarios. They also have training on the use of the equipment necessary to attend the emergency.

Operation has not designated any external community responsible to attend emergencies with Cyanide. In case of poisoning, Gualcamayo Mine is prepared to attend the emergency



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and has all the necessary antidotes and trained staff. The Emergency Plan establishes that Gualcamayo first aid will be providing by the medical staff of the Operation. The Operation performed regular training on the response in case of Cyanide release or other emergency involving Cyanide. The drills are performed in accordance with the “Plan de Simulacros de Gualcamayo 2014” which cover worker exposure and environmental releases.

Verified: The Emergency Drills Plan, during interview, with the Head of Emergency Mr. Hugo Montero. After performing the drills, results are evaluated and a report is issue. This report is then used to correct the deviations found, and thus improve the emergency response. The Brigade Members are retraining based on these results. All records are retaining by the Operation. The records include the name of the person trained, trainer's name, date of training and / topics that were discussed. During the audit the workers interviewed and brigade personnel were knowledgeable about the training received. The effectiveness of the training was verified by the Auditor on interviews with staff and evidence of written tests.

### ***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

Finding: Operation is in full compliance with Standard of Practice 9.1 according all the documented, videos, photos and records of reports of Programs, evidences as showed and evaluated by the Auditor. Interviews were making too with the Communities Relations Responsible by the communication with the Stakeholders. Operation provides the opportunity for communities and stakeholders to be informed and to voice their concerns on issues related to the safe handling of Cyanide. Before commissioning, the Operation communicated to all stakeholders the methodology of process and environmental care.

The Operation has several programs, which include:

“Puertas Abiertas” Program (Open Doors Program) This program Include visits of stakeholders and community to the Mine Site. In those visits, the visitors receive a presentation about de Cyanide that includes procedures, management, contingencies, and safety rules for use. As well, the visitors receive printed information related to it. The Auditor verified that more than 2,800 people visited the mine so far within this Program.

“Alianzas Seminar” (Partnership Seminars Program) Partnership Seminars are conduct within the communities surrounding our operations. As part of this program, Yamana accepts proposals to support local education, environmental, cultural, economic, and health projects and provides 70 percent of project financing. The auditor verify projects as “Construction of bathrooms and dressing room for the Water Treatment Plant of Mogna”, and “Donation of Safety Equipment for the Firefighters Volunteers of Villa Unión”



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Programs: “Integrar” and “Día Integrar” (Integration day): a journey for activities about environment, health, safety, mining information, sports, culture, and entertainment in the closer communities to the mine. Integrar program: is a formal program for activities in communities including health, family, sports, supplier development, quality and services, support to schools and hospitals. Verify the following programs: “Addictions Prevention”, “Productive Projects Training” and “Environmental Day”.

“Programa Participación Ciudadana” (Citizen Participation Program) Meeting for communities and stakeholders to keep informed about the issues of the mine. This presentation includes information about management of cyanide, cyanide audits contingency, emergency plan and, at the same time, there is a distribution of a manual with procedures for contingencies and emergencies. The Auditor verified that more than 3,700 people have been informed within the Operation influence area.

It is worth highlighting that a Hospital in Huaco (Investment: USD 1, 54 M), an Indoor Stadium in Jáchal (Investment: 1, 9 USD M) and a Waste Disposal Site in Jáchal (Investment: 3,33 USD M) has been constructed through Gualcamayo Fiduciary Found

Vice President of Minas Argentinas S.A. Lic leads community programs. Mario Hernández, in charge of the Community Relations area, who is very experienced in these matters and who was born in the town of Jáchal.

*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 ☐ not in compliance with Standard of Practice 9.2

Finding: Operation is in full compliance with Standard of Practice 9.2 according all the documented, videos, photos and records of reports of Programs, evidences as showed and evaluated by the Auditor. Interviews were making too with the Social Area Responsible by the communication with the Stakeholders.

Operation provides opportunities for stakeholders to interact through several programs.

*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

Finding: Operation is in full compliance with Standard of Practice 9.3 according all documents, presentations, videos, photos and records of reports of Programs, evidences as showed and evaluated by the Auditor. Interviews were making too with the Social Area Responsible by the communication with the Stakeholders. Operation has developed written materials and presentations, describing the way it conducts its activities and how the



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Operation manage the Cyanide safely and in a responsible manner.

After each presentation, the company provides it as printed information. In addition, after the presentation, the company provides the following written materials: Manual for Community Information: The manual objective is to make available to the community, information on events that can produce health risks to the population or the environment, and actions to take in each case. Monitoring Manual for Common Use: It consists in a quick guide to the environmental monitoring plan of Gualcamayo.

"The Management of Cyanide in Gold Extraction" – Logsdon, Hagelstein and Mudder - (ICME). These manuals are easy to follow and are focuses to teach safe practices and information regarding Cyanide and gold production at the mine. The manuals are distribute at site visits and any other event where mine personnel participate. Yamana Gold Inc. provides operational and environmental information in its annual corporate Sustainability Reports, and on its website [www.yamana.com](http://www.yamana.com)

The presentations of the information are oral and visual, including photos and drawings. During dissertations, speakers use simple language and accessible to all persons, so that everyone understands how the company conducts its activities. However, the percentage of illiterates in the region is not significant. If a significant incident with Cyanide occurs resulting in hospitalization or fatality, the Operation Policy is to send all the information to the Government Enforcement Authority (Mining Police), who maintains this information available to the public.



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