



February 04th, 2015

CERRO VANGUARDIA MINE

ICMI Recertification - Summary Audit Report

Submitted to:

International Cyanide Management Institute
(ICMI)
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Washington, DC 20006
UNITED STATES OF AMERICA

Cerro Vanguardia
Avda. San Martin 1032
9310, Puerto San Julian
Santa Cruz
Argentina

REPORT



Report Number 14931-55016_Rev.00

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1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS


Name of Mine: Cerro Vanguardia
Name of Mine Owner: AngloGold Ashanti
Name of Mine Operator: Cerro Vanguardia S.A.
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2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

The Cerro Vanguardia project is located in Santa Cruz Province in the far south of Argentina, at an elevation of 200 masl.



Figure 1: Regional Location Map

<p>February 04th, 2015 Report No. 14931-55016_Rev.00</p>	<p><i>Alexis Calder</i> Lead Auditor 1</p>	
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The Cerro Vanguardia deposit is a series of veins, and mined using open pit techniques. There are around 15 open pits with variable contents of gold, silver and base metals. Ore is mined at a rate of 1 million tonnes per year with an average gold grade of 9.5 g/t and of silver 111 g/t. The mine life is forecast at 15 years. The Cerro Vanguardia mineral processing plant has a capacity of 3129 tonnes per day. The process involves the following steps:

- Three stages of crushing;
- Stockpiling and blending;
- Grinding in a ball mill, with cyanide addition;
- Cyanide leaching;
- Washing and thickening;
- Leach solution clarification and precipitation of gold and silver using zinc powder (Merill Crowe process);
- Smelting to form metal doré;
- Carbon in leach (CIL);
- Heap leaching;
- Elution using the Anglo American system;
- Cyanide recovery using volatilization;
- SO₂ cyanide destruction to around 30 ppm CN (WAD);
- Deposition of tailings in a tailings dam.



SUMMARY AUDIT REPORT

Auditors Findings

This operation is:

in full compliance with

in substantial compliance with

not in compliance with

During the audit period there were no significant cyanide related incidents at the mine requiring reporting to the ICMI or incidents requiring public disclosure or reporting to the Standard of Practice 9.3.3.

Audit Company: Golder Associates

Audit Team Leader: Alistair Cadden, Lead Auditor and Technical Specialist

Email: acadden@golder.com

Name and Signatures of Other Auditors

Name	Position
Sergio Gonzalez	Auditor

Dates of Audit

The Certification Gold Mining Operations Verification Audit was undertaken within four days (eight person-days) between July 28 10 and July 31, 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 Mining Operations and using standard and accepted practices for health, safety and environmental audits.



PRINCIPLE 1 – PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers that Operate in a Safe and Environmentally Protective Manner

Production 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

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with 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.

CVSA purchased its cyanide from Cyplus until the end of August 2013; Thereafter it has purchased cyanide from Australian Gold Reagents. Cyplus GMBH manufactures cyanide at its Wesseling Plant, originally certified as code compliant on July 14, 2006, and re-certified as code compliant on December 7, 2009 and again on 2 October 2012.

AGR's Kwinana plant was certified initially on 09 October 2007 and recertified 13 March 2014.



PRINCIPLE 2 – TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 2.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.1; establish clear lines of responsibility for safety, security release prevention, training and emergency response in written agreements with producers, distributors and transporters.

Responsibility designation is clearly defined as well as standard procedures are clearly demanded in the contract, covering all the topics necessary to ensure the protection of the communities and the environment during cyanide transportation. This has been maintained in the change for supplier from Cyplus to AGR

Transport Practice 2.2: Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management

in full compliance with

The operation is

in substantial compliance with

Transport Practice 2.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.2; which requires that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

CVSA' s old cyanide supply contract with Cyplus and the new one wioth AGR demands full compliance of the Cyanide Code Principles and Standards of Practice.

CyPlus's Cyanide supply chain from the Wesseling manufacturing plant in Germany to Puerto Deseado in Argentina was certified as fully compliant with the code on June 2nd 2011. The supply chain within Argentina from Puerto Deseado to the mine site was certified as fully compliant with the code 1st July 2011.

AGR Argentina supply chain was certified on October 22, 2013. The ocean supply chain was certified on February 08 2011 and recertified on September 29, 2014

CVSA is responsible for the transport of the cyanide from Puerto Deseado to the mine. The haulage is undertaken by Paul Masson Cruz del Sur under contract to CVSA. Paul Masson Cruz del Sur was certified under the Code on 09 December del 2010 and recertified 8th February 2014.

Cerro Vanguardia keeps full chain of custody records for the cyanide shipments for both Cyplus and AGR in the warehouse department.



PRINCIPLE 3 – HANDLING AND STORAGE

Protect Workers and the Environment during Cyanide Handling and Storage

Handling and Storage

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.

in full compliance with

The operation is in substantial compliance with **Handling and Storage Practice 3.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with 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 cyanide storage area is the same as was audited in 2011 and has been well maintained in the intervening 3 years

No liquid cyanide is delivered to site. Solid cyanide is delivered in 1 tonne bulk bags within plywood boxes. The site has a purpose built cyanide delivery and unloading area with full secondary containment.

CVSA has ultrasonic level detection monitors fitted to the cyanide mixing and cyanide distribution tanks. These are connected to the SCADA system in the plant control room which is monitored full time by the plant control room operator. The SCADA system activates visual and audible alarms at preset intervention levels. In the event of overfilling the SCADA system automatically shuts off the mix water pump.

The cyanide mixing and distribution tanks are located on reinforced concrete plinths within the plant building. The cyanide mixing and distribution tanks are the same as were audited in 2011 and these too have been well maintained in the intervening 3 years

The cyanide storage areas are well ventilated, both in the cyanide storage compound and within the plant site (i.e. the cyanide distribution tank). Measurements from the site's fixed HCN monitors and the auditors' own portable monitor showed HCN levels to be below detection limits. The cyanide boxes in the cyanide storage compound are stored under a roof and off the ground. No solid cyanide is stored within the plant building. The potential for solid sodium cyanide to come into contact with water is minimal. Cyanide storage is in a secure compound with a fence and locked gates within the secure site perimeter boundary. Public access is prohibited. The only materials stored within the cyanide storage compound are boxes of sodium cyanide. No incompatible materials are present within the compound.

Handling and Storage

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

in full compliance with

The operation is in substantial compliance with **Handling and Storage Practice 3.2**

not in compliance with



Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.2; operate unloading storage and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

The written procedure on handling of sodium cyanide (PETS-GOP-PTA-020-Rev8) includes a detailed procedure for mixing cyanide. Boxes of NaCN are stored stacked 3 boxes high. PETS-GOP-PTA-020-Rev8 describes the requirements for treating spills of solid NaCN and spills of cyanide bearing solutions and requires the unloading and mixing of NaCN to be undertaken by two operators in the mix area, with remote observation by the operator in the control room.

CVSA is required to comply with Law 24.051 Hazardous Waste; Annex 1 Y7 Waste Containing Cyanides. The site is registered as a producer of hazardous waste under Law 2.567. CVSA is certified by the Province of Santa Cruz No 167 dated April 27, 2010. The empty cyanide containers are taken to a licensed hazardous waste landfill site off-site. Bags are washed with 5% sodium hydroxide solution for 48 hours to dissolve any residual cyanide. The bags are then washed by plant operators 3 times with fresh water within the cyanide preparation bunded area. This wash water is then sampled and analysed to verify that there is no residual cyanide. The Environmental Department take the bags and boxes to the waste storage area, which is a reinforced concrete paved area with reinforced concrete bund walls. These are sent to hazardous waste landfill by licensed hazardous waste transporters SERPEI SRL; Marbec. Hazardous waste landfill TAYM SA Cordoba. No cyanide containers are returned to the vendors.



PRINCIPLE 4 – OPERATIONS

Manage Cyanide Process Solutions and Waste Streams to Protect Human Health and the Environment

Operations Practice 4.1: Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.1; implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

CVSA has a number of written procedures developed for its cyanide facilities which are graded depending on the outcome of a risk assessment. These are stored on the Soft Expert Excellence Suite document management system, which is available on the site’s computer network. These have been routinely updated during the three years of this audit period.

CVSA has operating parameters and procedures for all its cyanide facilities.

The tailings dam stability and freeboard requirements are calculated each year by personnel from Anglo American Technical Services in Brazil and South Africa. This includes allowable piezometric levels and freeboard (3 m to allow for storage of a (PMP) probable maximum flood). Freeboard requirements are indicated on the dam wall with a colour coded marker board (red, yellow, green). In the process the pH is required to be over 10.5. This is set out in the training materials, plant operating manual and on the automatic control systems within the plant SCADA system. The allowable cyanide concentration in the tailings dam is 50 ppm. The operational target for the cyanide destruction system is 35 ppm at the point of discharge.

CVSA has developed a number of inspection and preventative maintenance systems that are embedded within the normal operations of the site. The frequency of the inspections of the cyanide facilities is performed to ensure proper operation according to the design parameters.

Inspections are carried out both formally, as part of a prescribed inspection regime, and informally as part of day to day operations. The maintenance planning systems which were in place at the time of the 2011 audit have been transferred from ELIPSE to SAP which was been implemented at the mine in August 2013. This system generates planned maintenance work orders automatically, and allows manual generation of corrective maintenance work orders.

CVSA operates a change management procedure based on a system of prefeasibility, feasibility and detailed engineering studies. The approval process involves people from operations, maintenance, safety, environmental department, and medical team.

CVSA has a number of contingency procedures to deal with process upsets such as emergency shutdown procedures for Cyanisorb plant; provision of emergency power supply; emergencies related to the tailings dam; Emergencies related to the heap leach.

CVSA has a number of inspection schedules to ensure that the plant is operating within its design parameters, including:



- Daily plant operators' inspections and shift reports. The shift boss records the 'daily news' in the shift logbook. Where necessary work orders are raised through the SAP system and corrective actions are undertaken;
- Planned Maintenance inspections weekly and monthly.
- Planned calibration of instruments such as HCN detectors, pH meters and SO2 detectors

There is a system for tank inspections for all tanks in the process plant. Inspections are performed according to API 653. Ultrasonic non-destructive testing is used to measure thickness of tank walls and is carried out annually. Formal visual inspections of tank conditions are carried out by maintenance staff every 6 months: check for condition of paint, leaks, rusting, visible deformation. If tanks are drained down, e.g. for repairs to agitators, an internal visual inspection is undertaken to check for evidence of loss of thickness, corrosion etc. Secondary containments are inspected regularly and maintained as necessary with crack sealant and epoxy paint. Sump pumps are trigger automatically to ensure that the solution levels in them are controlled. Leak detection at the site is undertaken through a series of monitoring wells in the plant area, near the heap leach and near the tailings dam. Pipelines, pumps and valves are inspected regularly as part of the day to day operations and through the planned maintenance system. The tailings pond is controlled through daily inspections, quarterly and annual inspections. Freeboard levels are marked within the TSF with colour coded indicators. The heap leach ponds also have freeboard indicators.

The computerised maintenance and planning system is used to document inspections and corrective actions. At the time of the previous audit a programme ELIPSE was used. This has been migrated to SAP.

Planned maintenance and corrective maintenance records are kept within the SAP system. It is easy to follow the chain of maintenance records, work orders, job completion and sign off within the SAP system. There is an annual programme of inspections at the heap leach facility that includes general inspections of the leach pad, pipes and ponds, mobile plant, fire fighting equipment, PPE, emergency showers and other safety related items.

CVSA has two 110 kW generators to maintain critical systems in the event of a power cut. They carry out a check every week to ensure that the equipment will start up if the general power supply should fail. Once a month a 'live' test is held whereby the Cyanisorb plant is run on the emergency back-up generator for 1 hour. Maintenance of the generator motors and mechanical equipment is undertaken monthly by the maintenance department. The heap leach facility has its own backup generator. The tailings facility also has its own backup generator to power the water return pumps in case of a power cut. The backup generators are tested weekly. Each month the Cyanisorb plant is tested running with the back-up generation system for 1 hour. Maintenance of the generators is undertaken monthly.

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

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.2; introduce management and operating systems to minimise cyanide use, thereby limiting concentrations of cyanide in mill tailings.

The ore at CVSA comes from a number of open pit mines and an underground mine. The grades of gold and silver at the mine vary significantly; in particular silver can range between 5 g/t and 500 g/t. To take



account of this CVSA has a comprehensive programme of ore grade evaluation, bottle roll testing and cyanide.

CVSA uses a combination of manual titration and online titration to control cyanide addition to the process. The site has a Cyanisorb cyanide reclamation plant to maximize the amount of cyanide reused, minimize the amount sent to the cyanide destruction circuit and reduce the overall amount of new cyanide added to the circuit.

Operations Practice 4.3: Implement a comprehensive water management programme to protect against unintentional releases.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.3; implement a comprehensive water management programme to protect against unintentional releases.

The TSF and heap leach water balance is updated with meteorological data from the site weather station. The water balance is used to evaluate the management of the tailings dam month by month. In an additional a probabilistic water balance model has been developed using GoldSim to simulate the water balance over a period of 12 years into the future.

- a) Water inflows and outflows are considered in order to calculate water balance. Inflows include precipitation, run-off from the surrounding areas and tailings discharge. Outflows include evaporation, water infiltration through the dam and the recovered water which is sent back to the plant. Water retained in the tailings is also taken into account. The heap leach water balance includes the irrigation rates of the ore.
- b) Extreme precipitation events have been modeled (>40 mm of precipitation and return intervals of as 100 years or more – the pregnant leach solution pond, emergency over flow pond at the heap leach facility and solution management systems have been designed for a 1:1000 yr rainfall event).
- c) Precipitation and evaporation rates have been measured at site. Monthly precipitation data is available since 1997, whereas monthly evaporation data is available since 2001.
- d) The catchment area of the dam has been taken into account in the calculations.
- e) Impacts of freezing and thawing are not considered in the water balance as there is no build-up of snow and ice over prolonged periods of time in the region, and there is no large catchment for the dam. Therefore the impact of these freezing and thawing is considered to be minimal.
- f) Losses of process solution due to seepage, evaporation, infiltration and recirculation have been taken into consideration in the water balance. The site is in an area of net negative water balance and so this information is used to minimize losses.
- g) In case of power outages, fixed and portable generators are available at both the tailings dam and heap leach facility to keep all the equipment working properly. By-pass systems have been implemented to solve problems related to piping
- h) The site is in an area of negative water balance and so there is no requirement to discharge water from the TSF. The amount of freeboard is set to enable the design storm to be retained with 1 m of freeboard.



i) The water table is usually monitored by piezometric and monitoring boreholes located in the dam and in the surrounding area.

CVSA has a comprehensive water monitoring system. Weekly report forms with information regarding seepage monitoring data are properly filled. Water levels are measured with piezometers which are installed along the dam. The pond and beach levels are also recorded by topographic survey. In addition, colour coded freeboard indicators have been installed within the dam. The PLS and emergency pond levels of the heap leach facility are monitored as are the barren solution flows from the plant to the heap leach and the PLS flows to the plant. Discharge flows at each discharge point are measured. Recovered water flow returning to the plant from the tailings dam is also measured.

The minimum required freeboard at CVSA tailing dam is 3 m. In addition, there is a visual level located on the dam which uses three colours (green, yellow and red) to denote safe, warning and critical levels. Topographic surveys are performed every three months to monitor the tailings level. At the heap leach facility the PLS pond freeboard is 1m, and that of the emergency pond is 2.7m. The levels in each of these ponds are recorded in the heap leach data sheet.

Precipitation and evaporation rates have been measured at site. Monthly precipitation data is available since 1997, whereas monthly evaporation data is available since 2001. This information is stored on CVSA's intranet. The information is used in the water balance calculations. To date it has not been necessary to modify the operational parameters at the mine since the data have not indicated significant differences to the assumed design parameters.

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

in full compliance with

The operation is in substantial compliance with **Operations Practice 4.4**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.4; implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

CVSA has a cyanide recovery and cyanide detoxification system to ensure discharges to the tailings dam do not exceed a cyanide concentration of 50 ppm CN WAD. The PLS pond at the heap leach facility is covered with netting. The site also has fencing and bird scarers to ensure wildlife does not come into contact with cyanide solutions. There have been no reported cyanide related wildlife or livestock mortalities. The leach solution is applied to the leach pad by drip irrigators which are buried about 30cm below the surface, to prevent ponding. No ponding was observed by the auditors

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

in full compliance with

The operation is in substantial compliance with **Operations Practice 4.5**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.5; implement a comprehensive water management programme to protect against unintentional releases.



The operation has no indirect discharge to surface water. CVSA discharges water from time to time from the open pit mines. Cyanide has not been detected in this water. Cyanide has not been detected in groundwater or surface water monitoring downstream of the operation. The mine has not impacted surface water with cyanide.

Operations Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

in full compliance with

The operation is in substantial compliance with **Operations Practice 4.6**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.6; implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

CVSA has implemented a number of measures to protect the beneficial use of groundwater including low permeability lines in the tailings dam, operation procedures to minimize seepage from the tailings dam, groundwater monitoring systems around the dam and plant and secondary containment systems.

CVSA does not use mill tailings as backfill.

No CN WAD has been detected in groundwater samples to date.

Operations Practice 4.7: Provide spill prevention or containment measures for process tanks and pipelines.

in full compliance with

The operation is in substantial compliance with **Operations Practice 4.7**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.7; Provide spill prevention or containment measures for process tanks and pipelines.

All cyanide facilities have secondary containment except the leach tanks, which have an array of 4 monitoring wells and remediation procedures should the need arise. To date cyanide has not been detected in groundwater samples near the leach tanks. The secondary containments are sized to be at least 10% bigger than the largest tank within them. Secondary containments have sumps which are pumped back into the original process tank. Cyanide pipelines have secondary containment in the form of HDPE wraps or pipe in pipe construction. The tailings delivery pipeline and return water pipeline run a long a pipe corridor that ensures that any spill will report towards the tailings dam or back to the plant. Secondary containments are built from HDPE, concrete, mild and stainless steel which are all considered to be compatible with high pH conditions.

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



in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.8

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with 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 plant site was constructed between 1997 and 1998. Fluor Daniel was the EPCM contractor. A full QA/QC programme was implemented during construction. The QA/QC programme has addressed the suitability of the materials being used for the works, which comprise of compacted earth and rock fill, reinforced concrete, mild steel, stainless steel and HDPE. Cerro Vanguardia has a comprehensive archive containing all original drawings, specifications, QA/QC documentation. The QA/QC documentation has been signed off by a number of institutions including Instituto Técnico de Hormigón (The Concrete Technical Institute).

New facilities built at CVSA since the 2011 certification audit include a carbon in column (CIC) circuit, the heap leach facility, raise of the tailings dam and upgrades to the cyanide detoxification system. These facilities have detailed quality assurance and quality control documentation. The QA/QC programmes have addressed the suitability of the materials being used for the works, which comprise of compacted earth and rock fill, reinforced concrete, mild steel, stainless steel and HDPE. The CQA records are kept on site in an archive. The QA/QC documentation has been signed off by a number of engineers from specialist engineering companies such as CAEFE, CLORAR Ingeniería S.A.; SERSOL S.R.L., AMEC and Golder Associates.

Operations Practice 4.9: Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.9

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.9; implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

CVSA has a written monitoring plan and detailed procedures of sampling and analysis, developed by Fernando Salomone the head of the mine's environmental department, who is appropriately qualified and experienced to undertake such a role. The procedures detail when, where and how samples should be taken and specify chain of custody requirements. Sampling conditions are recorded. Surface water and groundwater samples are monitored downstream of the operation by the mine's staff, third parties appointed by the authorities and community stakeholder. Animal mortality is recorded by the mine, but no mortalities related to cyanide have been reported to date. Monitoring is carried out a various intervals e.g., daily inspections around the tailings dam, weekly, monthly and quarterly monitoring. These frequencies are adequate to characterise the medium being monitored and to identify changes in a timely manner.



PRINCIPLE 5 – DECOMMISSIONING

Protect Communities and the Environment from Cyanide through Development and Implementation of Decommissioning Plans for Cyanide Facilities

Decommissioning

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

in full compliance with

The operation is in substantial compliance with **Decommissioning Practice 5.1**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.1: Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

The 2010 Closure Plan provides the written procedures for decommissioning all of the CVSA cyanide facilities at the cessation of operations. Additionally, the Closure Plan includes an implementation schedule for the decommissioning activities. The closure plan quantities and cost estimate are updated annually. At the time of the audit a new update of the closure plan was underway.

Decommissioning

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

in full compliance with

The operation is in substantial compliance with **Decommissioning Practice 5.2**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.2; establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.

Section 12 of the 2010 Closure Plan provides an estimation of costs associated with final closure. These have been updated annually. Argentine Mining Legislation does not require specific financial guarantees for mine closure activities. As CVSA has established self-insurance as the financial assurance mechanism to cover estimated costs for the mine closure activities including cyanide-related decommissioning activities as identified in its Closure Plan. A professional financial auditor registered with the CPCE (Professional Council of Economics of the Province of Santa Cruz), provided a certified statement (Certification of Financial Ratios, dated August 1, 2014) demonstrating that, based on its assessment using an accepted method of financial evaluation, that CVSA has sufficient financial strength to fulfill the decommissioning obligations. In its certified statement, the financial auditor indicated that financial evaluation methodologies described in the U.S. Code of Federal Regulations (CFR) at 40 CFR 264.143(f), 30 CFR 800.23, 10 CFR 30, Appendix A were used as guidance to determine the financial tests used in its determination.



PRINCIPLE 6 – WORKER SAFETY

Protect Workers' Health and Safety from Exposure to Cyanide

Worker Safety

Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminated, reduce and control them.

in full compliance with

The operation is

in substantial compliance with

Worker Safety Practice 6.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

CVSA has procedures describing how cyanide-related tasks prior to maintenance should be conducted to minimize worker exposure.

They require the use of personal protective equipment, implement procedures to review process and operational changes affecting the H&S of the workers and incorporate the necessary protection measures. CVSA has implemented a change management procedure that addresses the health and safety impacts of purposed process modifications, such as installing a fog injection system around the SO2 zeppelin. There is worker input to the managers on health and safety issues through the safety committee.

Worker Safety

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

in full compliance with

The operation is

in substantial compliance with

Worker Safety Practice 6.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

CVSA protects worker health and safety operating and monitoring pH >11, with an automated system to monitor and adjust pH as required. The operation has identified areas where there is potential for exposure to elevated levels of HCN and has developed work procedures to avoid this occurrence, with specified PPE and HCN gas monitoring equipment. The alarm level of the HCN detectors, fixed and portable, are set at 4.7 ppm.

The HCN monitoring equipment is maintained and calibrated every 2 months by SIAFA, a specialist company based in Buenos Aires. The operation is correctly signed with adequate warnings, has showers and eye wash stations, tanks and pipes with cyanide identified and pipes with signaled with the flow direction, MSDS and first aid informational materials in place. The operation implements a procedure for reporting and investigating cyanide related incidents.

Worker Safety

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

in full compliance with



The operation is in substantial compliance with **Worker Safety Practice 6.3**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.3; develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

CVSA has water, oxygen, a resuscitator, and a radio, telephone, alarm system or other means of communications or emergency notification readily available for use at cyanide unloading, storage and mixing locations.

CVSA regularly inspects the first aid medical cabinet ensuring equipment is available and operative. They replace materials and antidote according the manufacturer indications.

CVSA has specific written emergency response procedures to address potential cyanide spill accidents: Actuación de Emergencia con Intoxicación de Ácido Cianhídrico (HCN).

This procedure deals with ensuring the victim, giving first aid, recognizing intoxication symptoms, antidote administration, medical intravenous treatment and victim recuperation.

CVSA has its own on-site equipped medical post with two ambulances to assist workers exposed to cyanide and other emergencies.

CVSA will give first aid to cyanide intoxicated victims, administer antidotes and once stabilized the patient will be transported to Puerto San Julián hospital.

CVSA has agreements with the hospitals of Puerto Deseado and Puerto San Julián to treat patients exposed to cyanide. CVSA has ensured the hospitals have the relevant medical training and has informed them about the potential to treat patients for cyanide exposure.

CVSA undertakes mock drills and uses them to generate feedback and critical assessment to improve the performance of their emergency response.



PRINCIPLE 7 – EMERGENCY RESPONSE

Protect Communities and the Environment through the Development of Emergency Response Strategies and Capabilities

Emergency Response

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

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.1; prepare detailed emergency response plans for potential cyanide releases.

The Plan has specific response actions anticipating eventual emergency situations, developed an Emergency Response Plan to address potential accidental releases of cyanide. CVSA has emergency response plans to address potential cyanide spill accidents. These specify the necessary actions in case of exhaust gas of sodium cyanide, cyanide spills solid cyanide solution.

CVSA has identified the possible scenarios for an incident involving sodium cyanide. Outside the property considers the discharge of sodium cyanide in Puerto Deseado and transportation to CVSA, which could arise breaking or opening the container to spill into the sea or the concrete floor, emission of fumes, fire, collision, civil commotion, assault and robbery. The CVSA Crisis Plan sets out the actions to be taken to protect the communities near the affected areas. The operating procedure emergency response due to HCN intoxication specifies first aid treatment and antidotes that should be administrated to victims contaminated with cyanide. In the operating procedure Spill Monitoring cyanide solutions indicate the actions necessary to control, contain and monitor cyanide spills. The soil detoxification procedure using calcium hypochlorite in a possible spill of sodium cyanide is set to be applied primarily in the plant area and roads.

Emergency Response

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

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.2; involve site personnel and stakeholders in the planning process.

CVSA involve site personnel as managers, emergency teams, supervisors between others. Also involves the stakeholders as communities of Puerto Deseado and Puerto San Julián in the planning process.

CVSA communicates with the communities and authorities regarding the emergency response plans. The Community Relations program involves informing risks associated with current mining activity and how they are prevented. These risks include transport and usage of sodium cyanide.



CVSA has a community emergency working plan to respond against cyanide emergencies. As part of this plan they train Puerto Deseado and Puerto San Julian authorities for emergency response. The training includes response planning, communication, to hospitals, police, gendarmerie, prefecture and civil defense of Puerto Deseado and Puerto San Julián. CVSA provided details of communication informing the community about the cyanide transfer, security measures and training medical personnel to treat intoxicated. CVSA showed briefings with local authorities in Puerto Deseado and Puerto San Julián. CVSA provided information to local ports regarding cyanide transfer and security measures required. Local medical staff has been trained to treat cyanide intoxicated patients.

Emergency Response

Practice 7.3:

Designate appropriate personnel and commit necessary equipment and resources for emergency response.

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.3; designate appropriate personnel and commit necessary equipment and resources for emergency response.

CVSA has designated the general manager and managers of the operation as the personnel and commit necessary equipment and resources for emergency response. The CVSA emergency response plan designates and gives details of the training required by emergency responders. The plan includes emergency call out numbers and contact information the emergency response teams.

The emergency response plan defines the duties and responsibilities of the co-coordinators and team members. It includes a list of emergency response equipment, including personal protection equipment, available on-site and inspection requirements

The plan details the role of outside responders, medical facilities and communities in the emergency response procedures, for which CVSA has given training. CVSA has agreements with outside responders such as the police and the local hospitals regarding their roles in emergencies.

Emergency Response

Practice 7.4:

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.4: develop procedures for internal and external emergency notification and reporting.

CVSA has developed procedures for internal and external emergency notification and reporting. The information is organized, clear and easy to access. The operation is in full compliance with Standard of Practice 7.4; develop procedures for internal and external emergency notification and reporting.



The Cyanide Management Plan states in section 3.5 Transport Emergency Response Plan that Hazmat, the convoy escort, must communicate with the public agencies involved in the situation such as Civil Defense, Fire Station, Police, Secretariat of Environment, Traffic, relaying all information obtained in the emergency room. In Appendix 3.6 indicates the communications procedure, Appendices 3.4 and 3.5 shows emergency telephone numbers, an list government agencies respectively.

Appendix 7.1 Emergency Response Plan, item 2, contains a contact list with internal telephone numbers and public institutions. Item 4.1 shows the communications procedure to follow. The Plan includes response procedures and contact information for reporting on accidents involving cyanide that can affect surrounding communities, including contact data with the media. The Crisis Committee responsible shall notify the authorities and define the communication actions to follow. Communications to the community are made through the local newspaper and through AngloGold web site.

Emergency Response

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

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with 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 plan and its supporting documents describe the measures required for remediation and monitoring of cyanide spills, taking into consideration the additional environmental risks associated with using cyanide detoxification chemicals.

The Plan describes the measures for a solid cyanide spill during transport from the warehouse to the processing plant and the case for cyanide solution spill, indicating the procedure to retrieve it and neutralize the contaminated soil, which complemented detoxification procedures for monitoring soil and spills of cyanide solutions.

Soil detoxification procedures using calcium hypochlorite in a possible spill of sodium cyanide and also in the monitoring procedure spills cyanide solutions, describes the actions to be taken and remedial measures.

Bottled drinking water is provided at the site.

It is stated in the Plan that “sodium hypochlorite, hydrogen peroxide and ferrous sulphate should never be used to treat cyanide released into natural bodies of surface water. These chemicals are toxic to aquatic life”.

Monitoring requirements are specified in the site’s environmental procedures.

Emergency Response

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

in full compliance with



The operation is in substantial compliance with **Emergency Response Practice 7.6**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.6; periodically evaluate response procedures and capabilities and revise them as needed.

At least every two years or when required, procedures related to emergency response cyanide are reviewed and evaluated.



PRINCIPLE 8 – TRAINING

Train Workers and Emergency Response Personnel to Manage Cyanide in a Safe and Environmentally Protective Manner

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

in full compliance with

The operation is in substantial compliance with

Training Practice 8.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.1; train workers to understand the hazards associated with cyanide use.

CVSA trains all employees in cyanide hazards. Staff and contractors working in the mill have to undergo more specific cyanide hazard awareness training. Refresher training is undertaken. The Human Resources department keeps files with training records and a schedule of refresher training. In addition each department also keeps training records.

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

in full compliance with

The operation is in substantial compliance with

Training Practice 8.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with 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.


CVSA trains employees in the normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases.

Training elements necessary for each job involving cyanide management is adequately identified in training materials. By means of the matrix of risk identification and hazard assessment, CVSA identifies the elements that must be present in cyanide hazards training. The RNA – survey of learning needs - is also used to identify training elements.

CVSA personnel receive training related to cyanide management activities by appropriately qualified operation staff (shift leader and/or area heads). Trainers are designated considering their experience in developing the tasks and conditions to transmit their knowledge. The cyanide toxicology training was given by experienced physicians. Plant induction is given by an employee with 10 years' experience. HAZMAT is a recognized training service company.

CVSA gives refresher training in cyanide hazards annually to employees.

Individual training records are kept in the Training Center data base. Each area of the operation has individual employee files with the specific cyanide hazards training records. The records include the names of the employee and the trainer, the date of training, the topics covered, and evaluation records.

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

in full compliance with

The operation is

in substantial compliance with

Training Practice 8.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.3; train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

CVSA demonstrated that employees working in the unloading, mixing, production and maintenance facilities receive training on cyanide emergency response.

Considering that time is very important when giving first aid to potential victims of cyanide poisoning, CVSA has members of the emergency squad (BOER) working in the different areas where cyanide is present. There are personnel present in cyanide unloading, mixing, production and maintenance areas, trained in the procedures to be followed if cyanide is to be released, which includes procedures for decontamination and first aid. These personnel take part in routine drills to test and improve their response skills.

The emergency squad, BOER, and response coordinators are trained in the procedures included in the emergency response plan and using the response equipment.

CVSA has a community emergency working plan to respond to cyanide emergencies. As part of this plan they provided training to Puerto Deseado and Puerto San Julian authorities for emergency response. The training includes response planning, communication, to hospitals, police, gendarmerie, prefecture and civil defense of Puerto Deseado and Puerto San Julián.

The auditor reviewed communications informing the community about the cyanide transfer, security measures and training medical personnel to treat intoxicated.

CVSA gives refresher training in cyanide hazards to their employees annually; response to cyanide exposures and releases is included.

As there are employees with growing experience, the refreshing training varies to provide them with additional knowledge maintain the interest in learning.

Human Resources and H&S departments keep records 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.



PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

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

in full compliance with

The operation is

in substantial compliance with

Dialogue Practice 9.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.1; provide stakeholders with the opportunity to communicate issues of concern.

“Veta” Newsletter presents at the end of the publication an advertising slot with German Stoker’s e-mail address; this space is directed to make questions related to cyanide use. German Stoker is in charge of the communication area, and all the cyanide-related questions he receives will be steered to the person/area with the capacity of answering them. This publication is given to the operators who take it to their homes promoting an indirect communication channel with the community at Puerto San Julian, Caleta Olivia, Comodoro Rivadavia and Rio Gallegos.

This newsletter is also available through the intranet site available only for the people inside the mine.

There is also a company webpage that information directed to the public in general, including publications related to cyanide use.

Dialogue Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

in full compliance with

The operation is

in substantial compliance with

Dialogue Practice 9.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.2; initiate dialogue describing cyanide management procedures and responsively address identified concerns.

CVSA uses different communication channels which include magazines, newsletters and newspapers, TV programs, radio stations and training directed to people outside the company to disseminate the information related to cyanide use and management. There is an open communication channel between the company and the community. This communication channel intends to let people know that all their questions can be answered.

Dialogue Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

in full compliance with

The operation is

in substantial compliance with

Dialogue Practice 9.3

not in compliance with



Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.3; make appropriate operational and environmental information regarding cyanide available to stakeholders.

There is an open communication channel between CVSA and Stakeholders. Operational and environmental information is distributed to stakeholders. Environmental and operational incidents are back-analysed with the operators.

The operation has developed written descriptions of how their activities are conducted and how cyanide is managed which are available to communities and other stakeholders

All incidents which can impact to human health and the environment, like those listed from a) to e), are reported to the Provincial Mining Department. The authorities will make the information public upon request.

Events communication and information to local communities is made through the company website and a local newspaper.



Report Signature Page

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