# MINERA SOTRAMI S.A.

# MINING OPERATION
# SUMMARY AUDIT REPORT

FOR THE
INTERNATIONAL CYANIDE MANAGEMENT CODE

May 2023

SUBMITTED BY: BRUNO PIZZORNI - LEAD AUDITOR

BP Cyanide Auditors

Parque Federico Blume 142, Miraflores, Lima - Perú
Tel +51 947 259 440 | Email bpizzorni@cyanideauditor.com | Web CYANIDEAUDITOR.COM

# Content

| | |
|---|---|
| Mining Operation: | Minera Sotrami S.A. |
| Mine Owner | Minera Sotrami S.A. |
| Mine Operator: | Minera Sotrami S.A. |
| Name of Responsible Manager: | Rolando Ulises Huamancayo Manrique |
| Address: | Avenida Separadora Industrial 147 - La Molina |
| State/Province: | Lima |
| Country: | Peru |
| Telephone: | +51 972 208 311 |
| Email: | rolando.huamancayo@sotrami.com.pe |

# Location and Description of the Operation

Minera Sotrami S.A. (Sotrami) has been operating since 1990 the gold deposits of the *Santa Filomena* mine on the heights of Santa Rosa at 2,400 meters above sea level (m.a.s.l), district of Ancos, Ayacucho, Peru.

Initially this was an informal mining center that gradually increased in both mining workers and population. Around the undermining has been formed a village of precarious housing that currently exceeds 1,500 people. The vast majority of the population engages in this work directly, even women do so as an additional task to domestic work. Dependent on this activity, a varied set of small trade and services activities occupy a minority sector of the population. To date, miners have been organized in business to achieve a safe and efficient exploitation of the mineral resources, gradually adapting to the rules of mining health and safety.

The gold deposits in veins are exploited by "cut and ascending filling" works, with an operating rate of 15 t/day. Mining is carried out using drilling machines in 2 by 2 m galleries, which follow the course of the veins. Ore is transported by "metal buggies", which are mining carts adapted with tires, for men push transport; in other cases, pulleys or rustic hoisting systems are used to extract the ore in buckets, from shafts and galleries to a hopper, and from there to the buggies. Ore hoisting is done using "hoisting winches" through holes or built infrastructure intended exclusively for these purposes.

The process plant is located 10 km from the mine site, at the confluence of Santa Rosa and Acaville creeks, 270 m.a.s.l. The environmental characteristics of the area involve predominantly arid areas with sparse vegetation and a typical fauna of steppe zone. The abrupt topographical characteristics of the area and the lack of water limits the agricultural activities. The climatic classification of the region is pre-arid to semi-warm, with average annual temperatures that have a maximum of 24 to 27 º C and a minimum of 16 to 17 º C. Annual precipitation is 2.1 mm.

The area is shaped by igneous rocks and unconsolidated sediments surface. The igneous rocks, which constitute the basement of the region, create impermeable rocks or very little permeability. It is observed in the field constituting the mountainous mass, where the gold mineralized structures of the region are housed. Due to the arid characteristics of the region (scarce rainfall), and that the fractures are filled with mineral and clay, it is considered that there are no deep leaks, not observing in the field evidence of table water outbreaks in the lower parts of the hills.

The area occupied by the plant is 15,000 m2, which includes an ore collection yard, coarse hopper, primary and secondary crushers, crushed ore yard, a fine hopper and areas for grinding, cyanidation, desorption, electro-deposition, melting, refining, activated carbon regeneration area and a laboratory.

Currently the ore is transported from the mine to the process plant in trucks, using wooden bags and in bulk to the course hopper yard. The amount of ore coming from the Santa Filomena mine varies from 300 to 400 ton/month. Sotrami also receives material from third parties such as artisanal miners and contractors at a rate of 1,000 ton/month. The process plant capacity is 120 t/day.

The primary crush starts in the coarse thick hopper. The ore is passed through a jaw crusher where the material with 1/4" size granulometry feeds a vibrating screen. The thick product is unloaded to another jaw crusher in a closed loop.

The fine product from the vibrating screen is deposited in the fines hopper to be transported to a sampling yard by dumpsters and separated by batches of origin. Each lot is analyzed to determine the metallic content of gold and silver in the ore, which in average is 24 gr/t of gold, then it is moved to a hopper, using a front-end loader.

In the grinding area two ball mills operate carrying the primary and secondary grinding, from where the ore is sent to the cyanidation tanks. In this area sodium cyanide (NaCN), sodium hydroxide (NaOH) and water are added in order to obtain a pulp density between 35 and 50% of solids or 1,350 kg/l.

Solid sodium cyanide is delivered to Sotrami in the form of briquettes in one ton IBC (Intermediate Bulk Containers) boxes by truck in sea containers or in closed truck boxes. Once at the mine, cyanide is stored in a safe warehouse located inside the process plant. To prepare cyanide solution, boxes are moved with a forklift to the preparation are located inside the process plant.

The facility to prepare cyanide solutions was improved during this recertification period. Sotrami installed a basic system to pour cyanide from IBC into a new bigger mixing tank, all this located within the same process plant, about 30 meters from the previous mixing facilities. The system is made of a hopper, where a front loader lifts one ton cyanide bags and discharges it to a mixing tank to prepare the cyanide solution, which also is the high strength cyanide solution distribution tank. The previous system for pouring 50 kg cyanide cylinder pouring system, is no longer in use. High strength cyanide solution is added from the mixing tank to mill number one.

Pulp from the grinding area, with pH between 10 – 12 is sent to a cylindrical leacher and by gravity passes to the next tank where the activated carbon is held for the process of carbon in pulp (CIP) or adsorption; this process is repeated in other 5 tanks. After a time, the harvest of the activated carbon is made from all tanks to obtain the gold. The overflow of the last cell is sent to the tailing's facility, with gold content between 0.9 and 1.0 gr/ton. No cyanide destruction system is in place.

Then the desorption process is performed storing in a cylindrical tank the enriched carbon to obtain mineral values, where is added alcohol ethanol, NaCN and NaOH, at temperatures between 80 to 85 C° at atmospheric pressure, to wash the precious metals. This gold and silver charged (gold-rich) solution pass then to the electrolyte cells in the electrodeposition area. Here the work is done with

fairly low voltages as 2 to 4 volts, depending on the conditions of the solution. The anodes are made of stainless steel and the cathodes from steel wool.

In the refining area, the gold-rich steel wool is treated in an HCl container. To dissolve the steel, regal water is added to separate the silver from the gold, then precipitate it as AgNO3. Separated the gold in the solution, it is precipitated with the addition of diluted NaOH, then the pulp is filtered into a cloth, leaving the "golden mud" to be processed at the smelter.

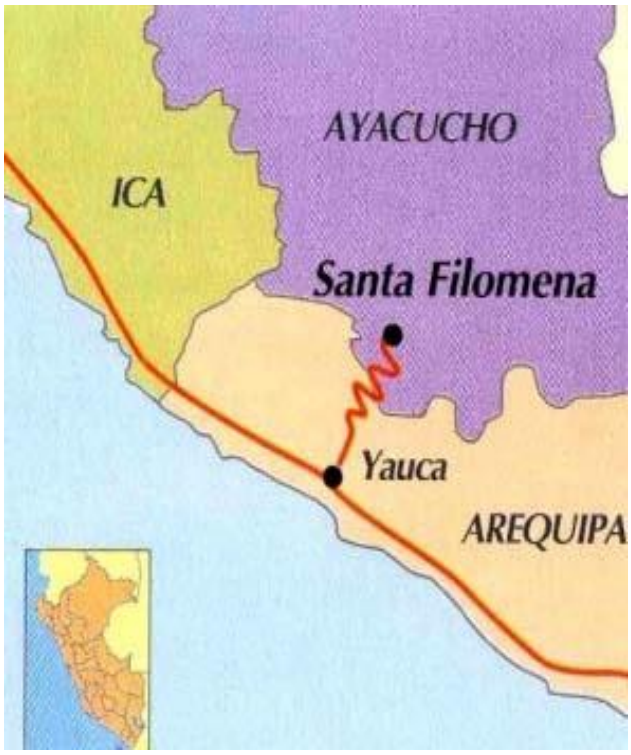
Once in the smelter, the first slag removes the wool or steel mesh, the metal left in the crucible is again melted with the addition of fluxes with the purpose of removing impurities, and then being emptied into a mold. This is treated with HNO3 for final cleaning, obtaining a high purity metal product of 99.95%, which is exported to Switzerland.

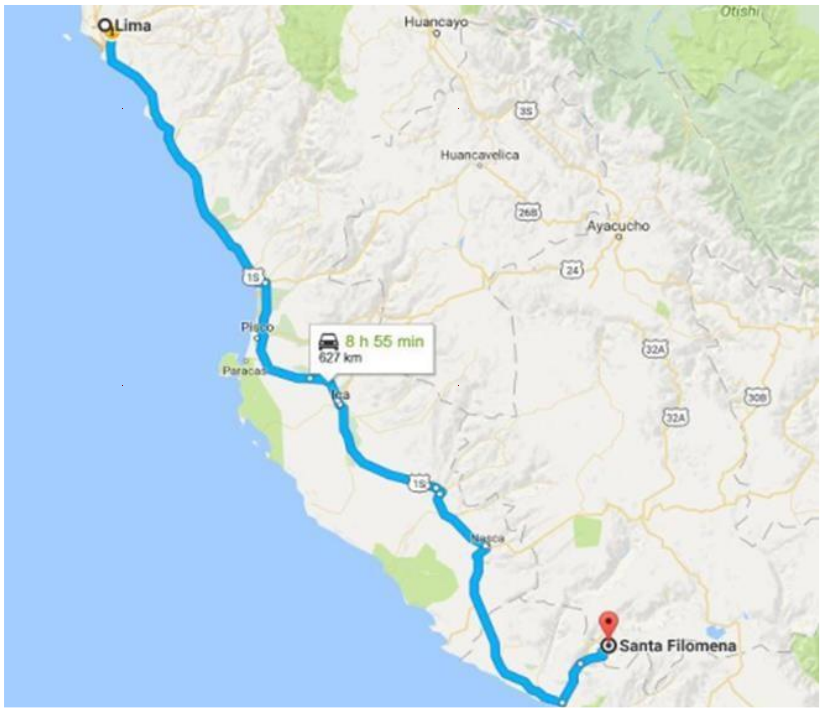
Carbon (free of rich substances), is washed with acids to remove organic substances, sieved into a screen and selected to an appropriate size, to be sent then to the regeneration furnaces at temperatures of 600 to 650 C°. This process reactivates the carbon surface which is mixed with new carbon to return to the CIP circuit.

Sotrami has two tailings storage facilities (TSF), A and B. TSF A is located near the process plant, has an area of 30,104 m2 and capacity for 7,584 m3 storage; currently is not in use as it completed full volume storage capacity and is in closing process. TSF B is located in the southwest area of the unit, the main cup comprises a perimeter of 330.5 m, with a total volume of 53,110.00 m3, which was increased with a vertical growth of 5 meters, reaching a final storage volume of 88,110 m3. The crown width is 6.0 m, with a rest angle of 45 degrees of slope, the foot of this is calculated at 18 m as well as the total height; The coating used 0.75 mm geomembrane and has an internal drainage system with drainpipes in fishbone arrangement that go to the 50 m3 drainage well located at the outside.

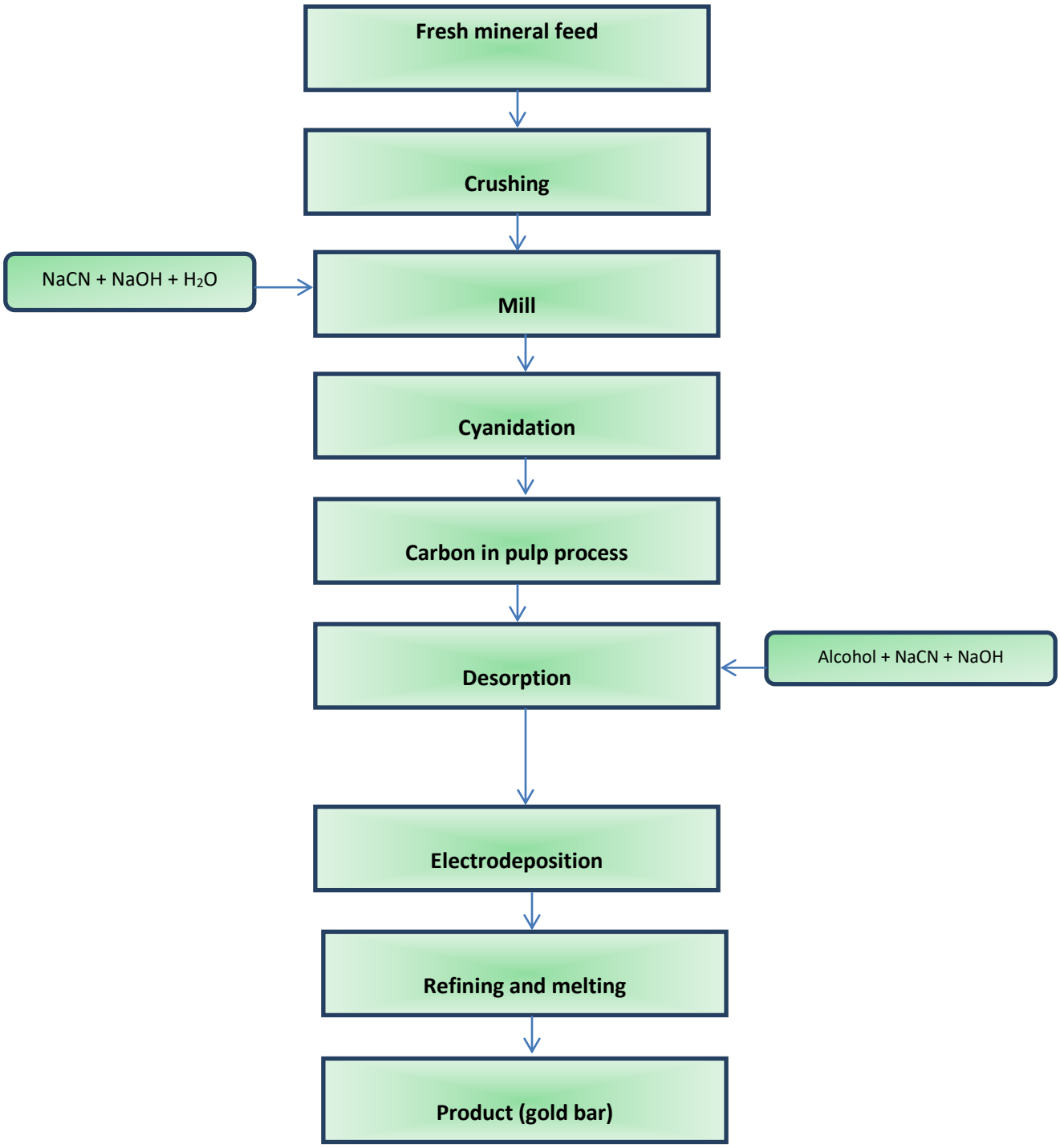
Tailings from the process plant is discharged by means of a 4-inch diameter HDPE pipeline, in "downstream" system, the decanting of solutions is done naturally forming the water surface of which the solution barren is pumped to the plant.

# Sotrami Mine Location

# Sotrami Ore Processing Flowsheet



# Auditor's Finding

This operation was found in Full Compliance with the Cyanide Code based on the audit findings discussed in this report under the following Standard(s) of Practice.

This operation has not experienced any compliance issues or significant cyanide incidents during the previous three-year audit cycle.

## Auditor's Attestation

| | |
|---|---|
| Audit Company: | BP Cyanide Auditors S.A.C. |
| Lead and Mining Technical Auditor: | Bruno Pizzorni<br>E-mail: bpizzorni@cyanideauditor.com |
| Date(s) of Audit: | November 29 to December 1, 2022 |

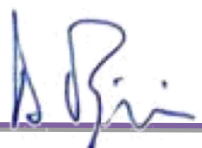
I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute (ICMI) and that all members of the audit team meet the applicable criteria established by the International Cyanide 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 Institute for Mining Operations Verification Protocol." and using standard and accepted practices for health, safety, and environmental audits.

Minera Sotrami S.A.
Name of Operations

Signature of Lead Auditor

May 25, 2023
Date



# Principle 1, Production

Encourage responsible cyanide manufacturing by purchasing from manufacturers that operate in a safe and environmentally protective manner.

## Standard of Practice 1.1

Purchase cyanide from certified 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

Sotrami acquires cyanide produced by Hebei Chengxin Co., Ltd., P.R. (Hebei), an ICMI certified cyanide producer. At the time of the audit, Hebei was found to be certified in the Code. According to what is indicated on the ICMI website, the deadline for conducting the recertification audit for Hebei has been extended to February 28, 2023, due to travel restrictions and health concerns resulting from the COVID-19 virus. The Hebei cyanide production facility was recertified in full compliance on 18 April 2023. During this ICMI recertification period, the operation purchased cyanide only from Hebei.

The auditor visited the cyanide warehouse finding all cyanide stored was from Hebei. Also reviewed the shipping documents, reception and purchasing records for the recertification period and interviewed the warehouse supervisor, conforming the operation acquires cyanide from ICMI certified manufacturers. The auditor compared the operation's purchase agreement or chain of custody documentation with the listing of certified cyanide production facilities on the Cyanide Code website to confirm that the cyanide was, in fact, produced by a certified operation.

During the audit the shipping documents for years 2021 and 2020 were not available for the auditor's review; after the audit Sotrami sent the requested documentation, no additional information was required to find this in compliance with the Code.

As a Recommendation for Improvement (RFI), the auditor asked Sotrami to incorporate into cyanide purchase orders, that cyanide must have An ICMI certified origin and the transport must also be certified or show a commercial agreement that indicates so. Also, that the shipping records must indicate the brand of cyanide dispatched.

# Principle 2, Transportation

Protect Communities and the Environment During Cyanide Transport.

## Standard of Practice 2.1

Require that cyanide is safely managed through the entire transportation and delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training and emergency response.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 2.1

Summarize the basis for the Finding/Deficiencies Identified:

The auditor reviewed the shipping documents, identifying identify each transporter, supply chain, and supply chain component that participates in transporting cyanide at any point on the route from the producer to the operation, confirming that each of these parties is certified or is part of a certified supply chain cyanide supply chain. Mercantil S.A., an ICMI certified supply chain last certified on April 1, 2022, is Sotrami´ s current cyanide supplier from the port of Callao at Lima, Perú to the mine site, through Beagle Shipping S.A. trucking company, last certified in September 2020. By other side, Hebei Chengxin Transport Global Ocean Supply Chain, last certified in the Code on August 10, 2020, covers the cyanide transport from its manufacture plant in China to the Callao Port, confirming that all the components of the supply chain are certified in the Code.

Beagle Shipping S.A. was last recertified in full compliance on 21 September 2020, as indicated on the Cyanide Code website. The auditor compared the operation's shipping records with the listing of certified cyanide transporters on the Cyanide Code website to confirm that the cyanide was transported by certified transporters, finding this in compliance with this Standard of Practice.

# Principle 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 and quality control and quality assurance procedures, spill prevention and spill containment measures.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 3.1

Discuss the basis for this Finding/Deficiencies Identified:

During this certification period, facilities for unloading and storing solid sodium cyanide have not changed, the mixing facility is new. The auditor confirmed Sotrami keeps previous documentation supporting the initial installations have been designed and constructed according sound and accepted engineering practices, as the Construction Certification Letter from 2019 provided by W&R Ingenieros (W&R) the construction contractor, confirming the plant was commissioned and all systems were functioning within the intent of the design and that all equipment and facilities for unloading, mixing and storage of cyanide have been designed and manufactured according to assumptions, parameters and engineering practices accepted for this type of facility.

During this certification period Sotrami installed a system to prepare cyanide solutions from one ton IBC (intermediate Bulk Containers) bags instead of the older system managing 50 kg barrels. This system although still basic, uses a bigger mixing tank, located within the same process plant, about 30 m from the previous mixing facilities. The system is made of a hopper, where a front loader lifts one ton cyanide bags and discharges it to a mixing tank to prepare the cyanide solution. The older system is no longer in use.

The auditor reviewed the design specifications and as-built drawings stamped by a certified professional engineer of W&R construction contractor. The auditor requested Sotrami to complement the construction information for the mixing facility, as the work approval from the manufacturer W&R, specifying the steel materials (type of plate, thickness) and compatibility of the materials used with cyanide solution and high pH conditions, welding certificates, construction procedures and records of qualified personnel used in the manufacture of the hopper and mixing tank system, as shown in the engineering project. After the audit Sotrami completed the requested information which allowed the auditor to confirm compliance with the Cyanide Code in this aspect. Sotrami also submitted records of the review and approval of design and construction documents by the regulatory agencies.

The cyanide unloading, storage and mixing facilities are located in the process plant away from people concentration areas and provided with a competent concrete pavement. No surface water body is around Sotrami operation. The site is in an arid area where annual precipitation is 2.1 mm., Nevertheless, Sotrami has managed the floor slopes of the cyanide warehouse and installed gutters to redirect any surface water runoff and keep cyanide storage free from any water contact with cyanide.

The process plant, inside which is located the cyanide warehouse, is surrounded by a fence and no unauthorized public is allowed to access. The cyanide storage area and offload facility are totally fenced, no offices are located close to these areas and located at safe distance from where workers may congregate.

About 50 meters away from the warehouse is a seasonal creek that rarely contains water except due to extreme rainy years. However, the auditor considers it does not represent a threat for the cyanide storage since Sotrami installed riverside defenses at critical points of this creek, with stone blocks to prevent any outflow of the creek and for proper channeling it. This creek is located well below the cyanide warehouse level.

Sotrami does not receive liquid cyanide, only solid cyanide briquettes in one-ton IBCs.

The cyanide preparation tank, which is also used for storage and distribution of cyanide solution, is equipped with overfill protection that works with an automatic high-level level indicator emitting an audible alarm when it reaches the maximum level set. The alarm is visualized in a display panel. Valve closure for high-level cases is done manually as there is always an operator present during the cyanide solution preparation. Sotrami has developed and implemented in the procedure PETS-SOT-PLT-018 Preparation of Cyanide Solution and Storage of Hazardous Waste, directives to inspect, maintain and routinely test the tank overfill protective equipment and instrumentation to ensure its correct operation.

At the time of the audit it was found that the tank did not have an ultrasonic level sensor, the level control was done visually. This was observed during the plant site visit. Sotrami quickly raised this observation during the field audit, as it had sensors in stock, which were installed correctly. The auditor confirmed that the equipment is installed and functioning, by inspecting the operation and testing its operation.

Sotrami has ultrasonic level sensors indicators installed in all his 11 process tanks to prevent the overfilling of cyanide storage tanks. The normal work volume of operation for the tanks is 90%. When it rises to 95% of its volume, the sensor activates a siren alarm, is a single high-level warning. The alarm is visualized in a display indicating in which tank is the alert, allowing the operator to act and immediately manually control the level rise of the tank to avoid the overflow.

The procedure for cyanide solution preparation requires routinely inspecting, maintaining, and testing overfill protection equipment and instrumentation to ensure it is functioning properly. The auditors reviewed these records, finding it in compliance.

The cyanide mixing and storage tank is contained in a metal tray in good conditions. In the same way, this tray is built over a concrete surface that serves as another secondary containment in case of spillage or dripping of highly concentrated cyanide solution. From visual observation the auditor

confirmed the support system for the tank containing high-strength cyanide solution rests on an impermeable barrier.

All process tanks in the plant have concrete secondary containment with berms in good condition and concrete flooring that can prevent seepage to the surface. Groundwater at the process plant location is found to be approximately at 120 m deep, according to the EIA (Environmental Impact Assess). With the exception of the cyanide solution mixing tank, the secondary containment of all other leaching process tanks is interconnected with a system designed to overflow from one containment to another containment, which is routinely inspected, thus increasing the installed containment capacity that far exceeds the size of the largest tank. To recover any spill from this secondary containment, the spill is gravity fed to the emergency ponds, from where it is pumped to the process again.

During the field inspection, the containment area was noted to be in relatively good condition, with no significant damage, or cracking evident.

Sotrami´ s has one tank of 6.86 cubic meters capacity that fulfills the functions of mixing tank and cyanide distribution to the process plant, contained within a welded steel and is in turn contained within concrete as secondary containment, which is routinely inspected, providing a competent barrier to leakage and sized to contain at least 110% of the cyanide mixing tank volume. The auditor reviewed the volumes calculation and through visual inspection. During the field inspection, the containment area was noted to be in relatively good condition, with no significant damage, spalling or cracking evident, confirming compliance with the Code requirements.

Cyanide is stored under a roof, off the ground, ad provided with a concrete floor that provides a competent barrier against filtrations into the ground. Although the operation is located in an arid zone, the warehouse is protected by a collection channel to avoid runoff water that could drain from the access ramp to the cyanide storage. The safety shower outside the cyanide storage area is designed such that leaks or other potential releases will not come in contact with cyanide.

The auditor requested Sotrami to improve the cyanide warehouse protection in the front and right side made up of metallic hexagonal electro-welded mesh, covering it to protect the cyanide storage from eventual rain in windy conditions (cross rains), avoiding cyanide contact with water. Soon after the audit, Sotrami sent photos showing that it had installed new raschel-type meshes (polyethylene woven mesh), which the auditor considers sufficient protection to avoid water contact with cyanide in this sense.

By observation, the auditor verified the cyanide storage facility has vents at the four sidewalls. As such, it provides adequate ventilation to prevent build-up of hydrogen cyanide gas in the event that the cyanide comes in contact with water. The tank containing reagent-strength liquid cyanide is located outdoors with good ventilation.

Cyanide is stored in a secure area where no authorized personnel is allowed to access it. The cyanide storage is in a building within the fenced boundary of the plant and has a separated fenced and locked area. Warning signs are posted at the entrance, prohibiting the access to non-authorized personnel. The access to the plant area is restricted. The tank containing reagent-strength liquid cyanide and valves are also located within a fenced and locked area.

Cyanide is stored separately from incompatible materials such as acids, strong oxidizers and explosives and any foods. Storage is provided with berms and walls that form an appropriate barrier to prevent mixing. The auditor checked the flow path a released material would take, confirming no releases from the separate areas may commingle. The storage area has separation compartments for incompatible materials as is necessary for hazardous materials, including cyanide. No storage of acids, strong oxidizers or explosives was observed during the field inspection.

## 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 responds to worker exposures.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 3.2

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has developed and implemented procedures to prevent empty cyanide containers from being used for any purpose other than holding cyanide. Sotrami no longer uses cyanide packed in cylinders, it only uses one-ton wooden IBC, where cyanide is packed inside in two plastic bags. No packaging is returned to the supplier. The Standard Operation Procedure (SOP) PETS-SOT-PLT-018 Cyanide Solution Preparation and Hazardous Waste Storage, specifies the appropriate measures to ensure that empty IBC materials as wood and plastic bags are managed in such a manner to prevent their use for any other purposes than holding cyanide.

The auditor made a task observation of cyanide solution preparation, verifying the empty bags were not being rinsed with water, which was declared as Substantial Compliance. After the audit, Sotrami sent pictures of the system installed to rinse the empty bags, consisting of a cross shape structure conformed with water pipelines where the horizontal component is a perforated pipe that allows the bags to be rinsed when they are inserted on top. They also sent photos carrying out the task of cleaning the bags, rinsing them with water through the installed system and incorporated this task into the respective SOP. No additional information was required to verify compliance with the Code requirements.

After cyanide solution preparation, empty wooden crates are dismantled, bags are rinsed 3 times with water, while monitoring HCN levels. The washing solution is evacuated towards the general emergency ponds and then transferred to the leach tanks. All material as wood and plastic bags temporarily stored in a secure place with no access to unauthorized personnel, then transported by an authorized contractor for hazardous waste to a formal landfill for this purpose.

Sotrami has developed and implemented the SOPs PETS-SOT-AL-01 Reception Sodium Cyanide NaCN, Boxes and Cans; PETS-SOT-AL-03 Cyanide Dispatch; and PETS-SOT-PLT-018 Preparation of

Cyanide Solution and Storage of Hazardous Waste, to prevent exposures and releases during cyanide unloading and mixing activities with sodium cyanide.

During the review of the work procedures the auditor required that they specify the following items necessary to be in compliance with the Cyanide Code:

- detail immediate cleaning of any cyanide residue from the area, after preparing the cyanide solution;
- include leather gloves for the operator who disassembles the empty cyanide boxes, since rubber gloves are subject to punctures when handling sharp objects;
- include checking that the feed valve from the CN tank to the system is closed when preparing the cyanide solution; and
- specify the necessary actions to be carried out when alarms are activated by the portable HCN gas monitors.

Soon after the audit Sotrami sent the SOPs including these requirements, specifying, among others, the action to take when the HCN monitors alarms are activated: at 4.5 ppm workers have to leave the work area and monitor the HCN levels until the supervisor authorizes re-entry to the area. When the alarm for 10 ppm is activated, the area should be evacuated and then the emergency brigade should investigate what caused this fact. The operation also sent records of having communicated these changes to its workforce, so no additional information was required to declare compliance with what is required by the Code.

The procedures include considerations regarding handling cyanide containers without rupturing or puncturing. They provide instructions for the safe handling of sodium cyanide one ton IBCs including handling upon receipt, storage and transport to and from the mixing area. The procedures requires the use of cones to isolate the area during the activity. The auditor verified that this task was performed as outlined in the SOPs.

The SOPs states limits to the height of stacking of cyanide containers. They prescribes to stack the cyanide IBC in three rows in a safe manner, allowing access, lowering and removal for preparation.

The procedures states that in case of spills of sodium cyanide, the support staff will immediately activate the Emergency Crew and the Central Emergency Committee. Once the contaminated soil has been collected, requires neutralizing it with sodium hypochlorite at 5% concentration (commercial bleach).

It also is required operators to use the appropriate Personal Protection Equipment (PPE) during mixing activities. These include portable cyanide monitor, two-way communications radio, steel-toed rubber boots, rubber gloves, approved respirator, face shield, Tyvek suit and hardhat.

A cyanide mixing event was observed during the audit; it was done by two workers and one observer apart. One operator stationed at floor level helps hook the IBC to the front loader and observes the second operator who, working from an elevated deck near at the top of the mixing tank, guide the cyanide bag to the hooper where the bag sits on a blade installed in the base of the hopper, introducing the content into the mixing tank. In addition, the procedure needed to address that all accesses to the mixing area must be cordoned off by means of a colored string and warning signs.

Sotrami purchases cyanide that comes with carmoisine red colorant dye inside the IBC box, resulting in a red colored solution of high-strength cyanide, allowing to identify any high concentration cyanide solution as such as well as deposits of accumulated salts by their color.

# Principle 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 including contingency planning and inspection and preventive maintenance procedures.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.1

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has developed and implemented written Standard Operation Procedures (SOPs) and plans designed to protect human health and the environment after identifying those tasks that, if not performed properly, have the potential to cause cyanide exposures or releases. SOPs have been developed for the cyanidation operation including reagent-strength cyanide storage tank and solid cyanide storage facility, secondary containments associated with cyanide storage and production facilities, leaching vessels, carbon washing, stripping and handling facilities, tailings storage facilities, milling equipment where cyanidation tailings reclaim water is used, all pumps, piping and appurtenances connecting these facilities.

The auditors reviewed the following operation's written operating plans and SOPs documents to confirm that they address the safe operation of all cyanide facilities. Implementation of these plans and procedures was confirmed through inspection of these activities and interviews with the personnel responsible for performing these activities, and review of the available documentation.

**PROCESS PLANT:**

| | |
|---|---|
| PETS-SOT-PLT-008 | Grinding start and stop |
| PETS-SOT-PLT-009 | Control of operational parameters in milling |
| PETS-SOT-PLT-010 | Inspection and change of Apex and Vortex of hydrocyclones. |
| PETS-SOT-PLT-011 | Adding bills to ball mills |
| PETS-SOT-PLT-012 | Change of graffiti rope of horizontal bombs 4"x3" |
| PETS-SOT-PLT-013 | Secondary pump drawer mesh change |
| PETS-SOT-PLT-014 | Greasing of pine nuts, gears and trunnions of the ball mills |

| | |
|---|---|
| PETS-SOT-PLT-015 | Operation cleaning of the grinding area |
| PETS-SOT-PLT-016 | Starting cyanidation equipment |
| PETS-SOT-PLT-017 | Control of operating parameters in leaching |
| PETS-SOT-PLT-018 | Preparation of cyanide solution and storage of hazardous waste |
| PETS-SOT-PLT-019 | Process sampling |
| PETS-SOT-PLT-020 | Operation Cleaning of the Cyanidation Area |
| PETS-SOT-PLT-021 | Addition of desorption and/or reactivated coal to agitator tanks |
| PETS-SOT-PLT-022 | Coal sewing loaded from agitator tanks. |
| PETS-SOT-PLT-023 | Control and inspection of sodium cyanide equipment and supplies |
| PETS-SOT-PLT-024 | Preparation of equipment for desorption process |
| PETS-SOT-PLT-025 | Reception and weighing of carbon from the plant for desorption process |
| PETS-SOT-PLT-026 | Transfer of inputs for desorption process |
| PETS-SOT-PLT-027 | Preparation of sodium cyanide solution for desorption |
| PETS-SOT-PLT-028 | Starting of desorption and electrodeposition process |
| PETS-SOT-PLT-029 | Desorption parameter control |
| PETS-SOT-PLT-030 | Discharge of desorbed coal from reactors |
| PETS-SOT-PLT-031 | Refining of Au and Ag |
| PETS-SOT-PLT-032 | Electrolytic cell harvesting |
| PETS-SOT-PLT-033 | Auric mud smelting |
| PETS-SOT-PLT-034 | Coding and storage of Bullion bars in vault |
| PETS-SOT-PLT-035 | Management of desorption carbon |
| PETS-SOT-PLT-036 | Securities Dispatch |
| PETS-SOT-PLT-037 | Dismantling, removal and transfer of equipment and materials in contact with cyanide |

**SAFETY, OCCUPATIONAL HEALTH:**

| | |
|---|---|
| PETS-SOT-PLT-039 | Change management |
| PETS-SOT-PLT-040 | Inspection of pipes, flanges, fittings and tailings disposal |
| PETS-SOT-PLT-041 | Unplanned shutdown of equipment due to power outage |
| PETS-SOT-PLT-042 | Inspection procedure for pulp and water pumps |
| PETS-SOT-PLT-043 | Inspection of sodium cyanide warehouse, tanks, equipment, pipes |
| PETS-SOT-PLT-044 | Investigation of accidents and/or dangerous incidents |
| PETS-SOT-PLT-045 | Correct use of Personal Protection Equipment |

**PLANT WAREHOUSE:**

| | |
|---|---|
| PETS-SOT-PLT-046 | Unloading and storage of sodium cyanide boxes and cylinders (NaCN) |
| PETS-SOT-PLT-047 | Caustic soda reception |
| PETS-SOT-PLT-048 | Cyanide dispatch |

**MEDICAL SERVICES:**

| | |
|---|---|
| PETS-SOT-PLT-060 | Administration of oxygen therapy |
| PETS-SOT-PLT-062 | Monitoring during the preparation of sodium cyanide |
| PETS-SOT-PLT-063 | First aid for cyanide poisoning |
| PETS-SOT-PLT-064 | Evacuation and transfer of the injured |

**EMERGENCY RESPOND:**

| | |
|---|---|
| P-SOT-PLT-013 | Rope rescue |

| | |
|---|---|
| P-SOT-PLT-001 | Response to social conflicts |
| P-SOT-PLT-002 | Fire response |
| P-SOT-PLT-003 | Emergency evacuation response |
| P-SOT-PLT-004 | Tailings Dam Collapse Response |
| P-SOT-PLT-005 | Traffic accident case |
| P-SOT-PLT-006 | Emergency medical care |
| P-SOT-PLT-007 | Natural disaster response |
| P-SOT-PLT-008 | Emergency Response with hazardous materials |
| P-SOT-PLT-009 | Flood response |
| P-SOT-PLT-010 | Emergency response to sodium cyanide |
| P-SOT-PLT-011 | Drowning protocol in tailings field |
| PL-SOT-SST-02 | Cyanide Emergency Response Plan |

**ENVIRONMENTAL:**

| | |
|---|---|
| P-SOT-MA 001 | Sampling in Surface Water |
| P-SOT- MA 019 | Environmental Monitoring |

The site's operating procedures incorporate the assumptions and parameters on which the design was based, as well as applicable regulatory requirements related to prevention of cyanide releases and exposures. The procedure PETS-SOT-PLT-040 Inspection of pipes, flanges, fittings, and tailings disposal, stablish the concentration of WAD (Weak Acid Dissociable) cyanide the tailing's impoundments should be below 50 mg/l, as necessary for wildlife protection, also specifies to maintain 1.5 m of freeboard. Sotrami has also set in the respective SOP the freeboard to maintain in the cyanide mixing and leaching tanks, the pH to maintain above 11 to avoid the formation of HCN gas. The design storm event for the impoundments is a 24-hour event for a period of 100 years, as stated in the engineering design plans for the tailing's storage facility and in the water balance.

Sotrami has developed and implemented standard operating procedures for those aspects of the operation that are necessary for protection of workers, communities, and the environment.

The SOP for Inspection of pipes, flanges, fittings, and tailings disposal, describe specific items that include water management procedures describing how and when tailings solutions must be managed to retain the design storage capacity in these facilities.

Preventive maintenance activities for the cyanide installations are considered in the annual maintenance plan which includes the key equipment for the cyanide facilities such as mills, pumps, tank level control and HCN detectors, among others. Sotrami presented the preventive maintenance records carried out in accordance with the established schedule.

Inspection programs include all the cyanide facilities such as process tanks and pipelines, leaching tanks and tailings impoundments. The preventive maintenance program is addressed in Excel worksheets as the Monthly Preventive Maintenance Concentrator Plan and the Annual Program of Inspections Sotrami Plant. These are described in the Standard Operating Procedures listed above. Cyanide management system includes the Water Balance and the Annual Environmental Monitoring Program.

Sotrami has developed the procedure PETS-SOT-PLT-039 Change Management (MOC) to identify, before implementing any requested change in the site's processes or operating practices may increase the potential for the release of cyanide and to incorporate the necessary release prevention measures.

During the audit, Sotrami was required to include into the MOC procedure, which proposed modifications must be evaluated for environment, in addition of health and safety. After the audit, Sotrami reviewed its MOC procedure, included requiring written notification to environmental and safety personnel and sign offs by these departments before the change can be instituted.

The auditor reviewed examples of MOC evaluations performed during this recertification period, where, among others, one related to cyanide was the new mixing cyanide mixing installation, finding this in compliance.

In its standard work procedures, Sotrami has included contingency procedures in the event of situations outside the normal operating parameters. Pre-planned responses have been addressed including measures to be taken in response to an upset in the operational water balance that presents a risk of exceeding the design containment capacity as tailings dam over freeboard level, cyanide concentrations in tailings, pulp overflows from cyanidation tanks, problems identified by facility monitoring or inspections as leaks in the tailings ponds liner; and temporary closure or cessation of operations due to situations such as work stoppages, lack of mineral ore or other essential materials, economics, civil unrest, or legal or regulatory actions.

Chapter V of the Mine Closure Plan includes, among others, the activities to be carried out in the event of temporary closure of the mine, as required by current local regulations D.S. No. 033-2005-EM Regulation for the Mines Closure, and its Amendment D.S. No. 036-2016-EM, in order to protect human health and the environment. The Plan considers that a temporary closure of the mining operation can occur for operational, economic reasons or for temporary suspension of operations, there may also be a temporary closure by decision of the authorities if they decide that the operation puts at risk the environment, health or safety of people.

The work procedures PET-SF-MANT-17 Grinding Equipment Stop-Plant and PETS-SOT-PLT-008 Grinding Start-up and Stop indicate the steps to be taken in case of temporary stoppage of the process plant. Given the nature of the leaching process in tanks, in the event of a temporary closure, in addition to the facility inspections, no other specific actions will be applied regarding cyanide solutions or cyanide pulps, except maintaining current safety measures, preventing entry to the cyanidation plant where the reagent warehouse and the process plant are maintained. In the same way, the entrance to the areas of the tailings deposits that are completely fenced will be prevented, preventing the free access of person or animals. The Plan indicates that environmental monitoring of groundwater and maintenance of facilities for surface runoff in case of rainfall will continue, although the area is extremely arid.

Sotrami inspects its unloading, storage, mixing and process areas; inspects tanks holding cyanide solutions for structural integrity and signs of corrosion and leakage; secondary containments provided for tanks and pipelines for physical integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment.

During the site visit, the auditor found that the recovery system for any cyanide pulp spill in the secondary containment had a hatch which was open, which in the event of a pulp spill would have caused a spill into the environment. Cyanide solutions in the secondary containment are designed to flow by gravity towards the contingency ponds, from where they are recovered by pumping and returned to the process. However, the drain sump from where all this spillage is channeled to the secondary containment has limited capacity and in the event of a major spill this would have escaped through the open gate in the secondary containment. Immediately during the audit, Sotrami fixed the gate that was stuck and included it as a checkpoint into the inspection checklist. No additional actions were required to find this in compliance.

The operation performs visual inspections for leak detection and collection at the tailing's ponds; inspects pipelines, pumps and valves for deterioration and leakage; and the tailings ponds for cyanide containment and available freeboard. As for the diversion of waters and although it is in a very arid zone, the mine ensures that the seasonal stream adjacent to the plant is free of obstacles and prepared to function properly in the event of any eventual rain. The operation provided 3 months inspection records where all these elements are inspected.

Sotrami has established weekly and monthly inspections for the cyanide warehouse, process plant facilities and tailings dam as scheduled on its Annual Program of Inspections Sotrami Plant. This is a detailed inspection program for cyanide facilities which include a list of critical aspects and areas to be inspected and inspection frequencies to pumps, piping, valves, secondary containments, warehouse, mixing area, secondary containments, tailings dam, over liner condition, wildlife mortalities, alkalinity of leach solution and piezometers, among others. It has also inspections conducted by personnel from different areas to the same facilities, which provide additional certainty that conditions that could generate impacts to health or the environment will be identified.

In accordance with the auditor´s professional judgment, the operation performs inspections frequently enough to ensure and document it is operating within the design parameters.

The inspections are documented on inspection forms and include the date of the inspection, the name of the inspector.

During the auditor´s review of the inspections carried out during the recertification period, in general there were very few findings from the inspections, so the auditor concludes that the personnel in charge of the inspection has lack of training to look at the points where it is desired to review. The inspection forms contained adequate information on the points to be reviewed, however despite this, there were no findings. Due to the above, Sotrami was required to provide the process plant operators with training on effective inspections and to show a month of inspections of the entire plant where findings area recorded.

After the audit, Sotrami provided training records from an external contractor, on effective inspections and submitted to the auditor one-month records of inspections showing findings from these inspections. The nature and date of corrective actions that identified the problem are documented along with the record of the inspection. Corrective actions are documented in maintenance records and work orders. No additional information was required to follow this standard of Practice.

Sotrami has a preventive maintenance program for its cyanide facilities where a failure can result in a cyanide release or exposure. The annual maintenance program is performed by means of a monthly schedule and weekly reports of the tasks to perform, which the auditor found to be accomplished according to stablished by the operation. The maintenance area has a preventive maintenance program for pumps, pipelines, valves, filters, tanks, and cyanide facilities in general. Maintenance necessary to keep the integrity of process equipment is performed according to this monthly schedule and every time it is needed to keep equipment and installations working properly.

The frequency of these preventive maintenance activities is scheduled and documented, along with the basis for the maintenance frequency, such as hours of operation and set time periods between maintenance. The operations keep an equipment maintenance history. The auditor inspected the cyanide facilities, reviewed the maintenance records for the recertification period and interviewed employees determining compliance with this provision.

Given the nature of Sotrami' s process plant, which consists of leaching in tanks, in the event of any lack or failure of electrical power, the operation would simply stop and would not cause spills into the environment since all the fluids would remain static. The mill and tailings impoundment are designed so that all transfers of cyanide slurry and solution require pumping. No portion of the facility allows gravity flow, then a power outage will not result in a release or exposure.

Due to productivity issues, Sotrami ha backup emergency power generator. The operation has 440 kw power generator on site and another of 200 kw for backup, located in a dedicated building close to the process plant. The generator supplies power to the mill, the processing plant and administration areas. Mill and plant operations require 230 kw. Sotrami provided consistent preventive maintenance records for the backup power generator, according to the maintenance program. Both power generators are periodically maintained confirming that are checked on a defined basis for fuel level, lighting, heating and are also start tested. This inspection would trigger a corrective maintenance work order if required.

## 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
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 4.2

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has ongoing programs to determine if the rate of cyanide addition in processing the ore at the facility is sufficient, but no greater than that required, to optimize gold recovery. The procedure identifies anticipated changes in the characteristics of the ore fed to the mill and modify the cyanide addition rate accordingly. The operation has a program of manual sampling and analysis of tailings to

determine residual cyanide levels and to allow for the adjustment of addition rates as necessary to maintain optimal dosing.

The operation implemented a strategy to control its cyanide addition. The strategy of Sotrami has to do with the use of mineral blending. Through blending, Sotrami mixes the minerals from different sources of supply and determines an average head grade, with which they have already identified on how much cyanide strength they should use steadily for the average of that grade calculated by blending.

If there is a new ore supplier or ore to process brings sulfurized or mixed matter (oxide and sulfur), metallurgical tests are done to define its treatment. Through blending, Sotrami mixes the minerals from different sources of supply and determines an average head grade, with which they have already identified on how much cyanide strength they should use steadily for the average of that grade calculated by blending. The auditor reviewed several examples of the metallurgical tests performed in their lab.

As indicated by the plant manager, to determine the appropriate cyanide addition rates in the mill and to adjust addition rates as necessary, Sotrami performs metallurgical test as the geologic of the material processed is very varied. Actual monitoring and measurement of cyanide concentrations at various points in the process is conducted by mill personnel via real time titration analysis. Sotrami process not only its own mined mineral, but also other ore mineral provided by thirds small miners. Every batch mineral is inspected visually and when showing different geological conditions, it is performed a metallurgical test.

The auditor reviewed several examples of metallurgical test reports made by the Sotrami laboratory performed according to their SOP Metallurgical Testing Procedure. The mine identifies its ore to process through this laboratory validation, and knowledge of the plant metallurgical procedure for its treatment. Similarly, this procedure is performed for the already know different sources of supply of collection ore (mining provided by artisans in the area), which are also identified by a code that indicates what metallurgical treatment the plant does.

Cyanide addition is evaluated during the metallurgical tests and controlled with an optimum target set for cyanide consumption. There are two cyanide addition points: one at the mill and the other at the melting area. Actual monitoring and measurement of cyanide concentrations at various points in the process is conducted by mill personnel via real time titration analysis. Sotrami controls its cyanide addition, based on experience and expertise of the plant operators. Results from the daily cyanide concentration analyses are continuously used to control cyanide addition. The results are reviewed and, if changes are needed, they are communicated to the process operator.

# Standard of Practice 4.3

Implement a comprehensive water management program to protect against unintentional releases.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.3

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has a water balance and probabilistic analysis model developed by an external contractor. The model considers the factors necessary for such an evaluation, including freshwater additions and recovered barren solution from the tailing ponds and desorption process, the tailings deposition rates, the tailings moisture content, precipitation and evaporation. Climatologically the area is considered extremely dry because it has a deficiency of rainfall in all seasons, with average annual rainfall between 0.5 to 13 mm. Has considered a 24 hour storm design with return period of 120 years.

The water balance model takes into account the uncertainty and variability inherent in the prediction of precipitation patterns. The frequency and distribution of precipitation events is considered along with extremes and seasonal variations. In the analysis and treatment of meteorological information considers four meteorological stations from SENAMHI (National Service of Meteorology and Hydrography) located in Caravelí, Arequipa. The frequency analysis is based on the adoption of a probabilistic model that represents the behavior of maximum precipitation in 24 hours.

Sotrami has two tailings' ponds. Pond A with storage volume of 7,584 m3, is no longer in use and is in closure process. Pond B with 1,760,000 m3 is the actual tailings pond in use. The tailings deposit B is located west of the confluence of the Acaville and Santa Rosa streams, next to the tailings deposit A.

According to the geophysical prospection carried out in the field stage, it is estimated that the water table is at a depth of approximately 120 to 130 meters, being the direction of underground flow of NE - SW presenting a hydraulic gradient of 4.5%.

Both tailings' ponds have a single geomembrane lining on its entire surface. Four piezometers have been drilled downstream the ponds with different depths, the deepest being the piezometer (Pz-2), with 42.80 meters and which is currently in a dry state, like the others, which indicates that there is no presence of groundwater that interacts with the tailing's deposits. The water balance study indicates that the difference in levels between the base of the surface of the ponds and the depth of the Pz-2, is 106 meters, so a possible contact between the leached water and the groundwater is zero, given that the hydraulic gradient by infiltration is 14.92 m, depth, value that is much less than 106 m., thickness of the soil that is in a dry state.

The water balance model considers the rates at which tailings are deposited daily into the tailing storage facilities, an average of 100.07 m3/day.

Considers a design storm of 24 hours duration and storm return interval of 120 years that provides a sufficient degree of probability that overtopping of the impoundment can be prevented during the operational life of the facility.

The model considers the quality of the existing precipitation and evaporation data in representing actual site conditions. The monthly rainfall, which characterizes the study area has been determined on the base of Chala meteorological station, being close to the study area, where the highest historical record annual rainfall reaches 4.91 mm.

It also takes into account the amount of precipitation that would enter the impoundment resulting from surface run-on from the up-gradient watershed, including adjustments as necessary to account for differences in elevation and for infiltration of the runoff into the ground, solution losses due to evaporation which is in average 4.33 mm/day, the capacity of decant, and recovery of barren water pumped back into the process plant. There are no discharges to surface water.

The model has taken in consideration the tailings storage facility freeboard of 1.5 m and the assumed phreatic surface being approximately 120 to 130 meters depth. It also considers the effects of potential power outages or pump and other equipment failures on the removal of water from the facility and the barren solution returning from the tailing's storage facility.

The water balance for the tailing's storage facilities considers the design the freeboard of 1.5 meters over the design storage capacity and the contingency pond. The auditor reviewed the operation's inspection records for the tailings facility B as the other is in process of closure, period verifying that the facility is operated with adequate freeboard.

The inspection and monitoring activities necessary to ensure that the operation follows its water balance are described in Sotrami' s SOP PETS-SOT-PLT-040 Inspection of pipes, flanges, fittings, and tailings disposal. This procedure includes items for monitoring daily the tailings storage facility and emergency pond freeboard and monitors the daily rate of tailings deposition in the tailings pond. Inspecting of surface water diversion structures for run-on from upgradient watersheds are inspected once a year anticipating the rainy season which occurs between months of December to March.

Verification was based on a review of the facility's standard operational procedure for inspections, the annual inspection program and inspection records, verifying these inspections and monitoring activities are being conducted.

The operation is in process to buy a meteorological station for the site to measure precipitation. In occasion of the audit, Sotrami was routinely comparing the data from the Chala meteorological station to the design assumptions used to develop the water balance model, to ensure that actual precipitation data is according to that assumed for the facility design.

For Sotrami operation, there is minimal undiverted upgradient watershed, so a slight increase in the amount of precipitation will have minimal effect on the water elevation in the impoundment.

The operation provided monitoring records for the auditor's review. No changes or updates to the water balance have been made.

## 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.4

Discuss the basis for this Finding/Deficiencies Identified:

The tailings storage facility B is the only impounded with water in Sotrami´s operation. It has complete fencing around the tailings dam with galvanized wire mesh, providing a competent restriction to access by wildlife and livestock, same protection has the tailings storage facility A but this one does not have water, only dry tailings as is not in use and is in closure process.

Sotrami's Annual Environmental Monitoring Program requires quarterly WAD cyanide monitoring for industrial wastewater. Monitoring to WAD cyanide in the tailing's storage facility B accordingly - facility A is dry and in closing process. The auditor reviewed the monitoring reports performed at this facility during this recertification period by the external contractor SGS Laboratory.

They monitor WAD cyanide in three locations: two of them in the water surface and the other in the humid tailings beach, reporting values that go from 3.82 mg/l as a minimum to 12.40mg/l WAD cyanide as a maximum value, due demonstrating that the cyanide concentration in open water in its tailings storage facility B does not exceed 50 mg/l WAD cyanide.

The analysis are performed by the Method OIA-1677: Available Cyanide by Ligand Exchange and Flow Injection Analysis (FIA). a SGS Laboratory is accredited by the National Quality Institute (INACAL due to its acronyms in Spanish).

Sotrami inspects the tailing storage facility B daily and records in the inspection form if wildlife mortalities are found or not. The auditor verified reviewing that no wildlife mortalities due to cyanide have been registered during this recertification period. Therefore, the auditor concludes that keeping WAD cyanide concentration below 50 mg/l in open water is effective in preventing wildlife mortality.

Sotrami do not has heap leach cyanidation.

## 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.5

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami does not have any direct or indirect discharges to surface water. There is no surface water in the area, except when the Santa Rosa creek is activated for few days due to exceptionally rainy years. Sotrami does not have any direct or indirect discharges to surface water. The Process Plant does not generate discharges to surface water because it is designed in a closed circuit.

## 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.6

Discuss the basis for this Finding/Deficiencies Identified:

The main facilities that may contribute to seepage are the tailings impoundment and the leaching tanks at the process plant. According to the report "Detail Engineering of the Tailings Deposit B of the Santa Filomena II Benefit Concession", from ACOMISA mining consultants dated from 2018, the groundwater level in the area is estimated to be at a depth of approximately 120 to 130 meters.

The tailings impoundments have full lining with synthetic materials. A first layer made from non-woven geotextile of 300 gr/cm2 on the internal slopes of the vessel for protection of the geomembrane and a second layer with a HDPE geomembrane of 1.1 mm thick.

The plant leaching tanks have been built on reinforced concrete slabs 15 cm thick with waterproofing treatment. The whole area has a secondary containment of reinforced concrete.

Verification included a review of the facility’s design and operating practices, observation of the facilities and interviews with personnel. The auditor reviewed a complete set of engineering

drawings of the plant and tailings impoundment signed by a competent professional. The project has been approved by local authorities as was found in compliance with national regulations.

Sotrami's Annual Environmental Monitoring Program requires quarterly monitoring for water quality which includes monitoring for ground water in three piezometers located downgradient of the tailing's storage facility B; the deepest well is around 42 meters deep but is without water. As mentioned in Standard of Practice 4.5, groundwater level in the area is estimated to be at a depth of approximately 120 to 130 meters.

No designated beneficial use exists for groundwater in the area. According to the project Environmental Impact Assessment (EIA), the current use of the land in the project area is considered land of protection, inappropriate for agricultural purposes (Acaville creek), for not having water and for the characteristics of the type of soil. The soils of the area project for its capacity to use are in class VII, which includes areas not appropriate for intensive or agricultural crops, except for small very focused areas, dedicated to agricultural purposes of internal consumption.

Also, the EIA states that due to the arid characteristics of the region (scarce rainfall) with average precipitation in the area being 2.1 mm/year and that the fractures are filled with mineral and clay, it is considered that there are no deep leaks, not observing in the field evidence of table water outbreaks in the lower parts of the hills.

Sotrami does not use mill tailings as underground backfill.

Sotrami does not have seepage that has caused cyanide concentration of groundwater to rise about levels protective of beneficial use.

## Standard of Practice 4.7

Provide spill prevention or containment measures for process tanks and pipelines.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 4.7

Discuss the basis for this Finding/Deficiencies Identified:

Spill prevention and secondary containment measures are provided for all cyanide mixing and process solution tanks with 0.5 mg/l or greater WAD cyanide concentrations at Sotrami. Containments are adequately sized and are connected such that they can convey solution to the next containment without overflowing and without relying on pumps.

The containments are competent as they are in good condition and provide a large containment area. The auditor verified by observation of the facilities that all cyanide mixing, and process solution tanks are provided with reinforced concrete slab in good conditions. Design drawings were reviewed during the initial certification audit and were found in compliance The plant leaching tanks have

been built on reinforced concrete slabs 15 cm thick with waterproofing treatment. The whole area has a secondary containment of reinforced concrete conformed of concrete pavement surrounded by curbs and walls, providing a competent barrier against solution leaks.

Secondary containments for all cyanide mixing and process tanks are sized to hold a volume greater than that of the largest tank within the containment and any piping draining back to the tank, with additional capacity of 10% the volume of the greater tank. The secondary containment volume calculations for the process tanks were reviewed during the initial certification audit and was deemed as sufficient.

In occasion of this audit calculations were found to be missing to demonstrate that the secondary tank containment for the new cyanide mixing tank was enough to contain at least 10% more of the tank volume. Subsequently, Sotrami sent the engineering calculations showing that the capacity of the secondary containment for this tank complied, so no additional information was required.

The auditor observed that the secondary containments were maintained empty, with no materials stored inside them. In addition, design drawings of secondary containments for cyanide storage, mixing and process tanks were reviewed by the auditor and were found in compliance.

Sotrami has developed and implemented procedures to prevent discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in the secondary containment area in the process plant. All tanks and cyanide facilities are located inside concrete secondary containment systems. Any spill of pulp or cyanide solution in the secondary containment will flow by gravity towards the contingency pond, from where it is recovered by pumping and returned to the process circuit.

The procedure *PET-SOT-PLT-08.01 Handling and Preparation in the Sodium Cyanide Tank* address management of overflows from the sodium cyanide mix tank and any spills flow into the concrete bounded area that redirects solution to a sump pump.

All cyanide process tanks at Sotrami have reinforced concrete secondary containment.

All cyanide pipelines at Sotrami are located within a secondary containment at the process plant. Cyanide pipelines are inspected daily as part of the routine inspections by plant personnel. Any spill would fall into the secondary containment. Any liquid would be directed back into the system. The auditor reviewed routine formal inspections records and interviewed the site personnel confirming this evidence that inspections are being conducted.

The pipeline that carries tailings by pumping to the tailing's storage facility has secondary protection conformed by tube inside a tube and in other sections through gutters lined with geomembrane, due to the steep of its trajectory. During his visit to the tailing's storage facility B, the auditor found part of the pipe was unprotected before its final section towards the dam, which was observed. Soon after the audit, Sotrami sent pictures showing that all of this pipe had been channeled with a liner, thus providing total protection. No additional information was required to find this in compliance.

No cyanide pipelines present a direct risk to surface water, as there is no surface water in the surroundings of Sotrami's process plant. The environmental characteristics of the area involve predominantly arid areas . All facilities are far away from areas that may require special protection.

All cyanide mixing and process tanks are constructed of carbon steel; solution pipelines are constructed of steel or HDPE, which is compatible with high pH cyanide solutions.

During the plant visit, it was observed that a few pipeline fittings made of galvanized iron were used for cyanide addition pipeline. No information was available no demonstrate this material was compatible with cyanide solutions and high pH. Subsequent to the field visit and during preparation of this report, Sotrami provided photographic evidence demonstrating that these conditions have been corrected in a timely manner and replaced by stainless steel and HDPE materials. It is the auditor's judgement that this condition does not represent a significant risk to the environment or the health and safety of the workforce.

## 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
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 4.8

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami's existing facilities for cyanide unloading, storage, mixing and all other cyanide facilities including the leaching process tanks and tailings storage facilities have been professionally designed and constructed according to accepted engineering practices. During the initial certification audit in 2019 the design drawings were reviewed and found in compliance.

The new facility to prepare high strength cyanide solutions which consists of a mixing tank built over a reinforced concrete slab surrounded by secondary containment and a basic hopper system to pour the cyanide briquette from IBC bags, was constructed by Grupo e Inversiones W&R S.A.C (W&R), a formal contractor who previously also performed and executed the engineering works for all the process plant. The auditor reviewed a Construction Certification Letter provided by W&R confirming the new mixing system was commissioned and all systems were functioning within the intent of the design and that all have been designed and manufactured according to assumptions, parameters and engineering practices accepted for this type of facility. The auditor reviewed the design drawings performed, signed, and stamped by certified professional engineers. Sotrami provided overall direction and approvals for the construction with project management and procurement.

Although formerly quality control and quality assurance programs have not been implemented during this construction, Sotrami achieved the approval of the jurisdiction authorities to operate this facility.

In absence of quality control and quality assurance programs for the initial construction of the process plant, including installation of synthetic membrane liners used in ponds and for construction of cyanide storage and process tanks, the construction contractor and project designer W&R endorsed a letter dated February 12, 2019, confirming the suitability of materials and adequacy of soil compaction for earthworks such as tank foundations and earthen liners, the installation of synthetic membrane liners used in ponds and for construction of cyanide storage and process tanks, which was found compliance during the initial certification audit. In the same way, the contractor W&R confirmed the suitability of materials, soil compaction, concrete slab foundation and materials adequacy for the new cyanide mixing tank.

All documentation regarding the engineering drawings and the suitability and adequacy of the existing installations is kept at Sotrami mine site the Projects Office, including records of the new cyanide mixing tank installation, and the review and approval of design and construction documents by regulatory agencies.

Appropriately qualified personnel reviewed the cyanide facility construction and provided documentation that the facility has been built as proposed and approved. Construction records include sign-off by the contractor W&R construction engineers with a professional registration, confirming that the facilities have been built as shown in the design drawings.

Appropriately qualified person certify that those elements of the facility involving cyanide and issued a report concluding that its continued operation within established parameters will protect against cyanide exposures and releases. The certificates from W&R confirms the plant and new cyanide mixing facility was commissioned and all systems were functioning within the intent of the design and that all equipment and facilities for unloading, mixing and storage of cyanide have been designed and manufactured according to assumptions, parameters and engineering practices accepted for this type of facility.

## 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
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 4.9

Discuss the basis for this Finding/Deficiencies Identified:

The operation has written cyanide monitoring plans or procedures for wildlife and water quality. Sotrami has developed and implemented written standard procedures for monitoring activities related to water and environmental monitoring: P-SOT-MA 001 Sampling in Surface Water and P-SOT- MA 019 Environmental Monitoring. In addition, Chapter X of the Environmental Management Plan is dedicated to monitoring activities.

Sampling and analytical protocols have been developed by appropriately qualified personnel. The Environmental Impact Assessment (EIA) study set the guidelines for environmental monitoring. This EIA study was performed by Compañía de uso Minero Ecológico y Técnico - COMPUMET EIRL, Peruvian Company of Ecological and Technical Mining Use, registered in the General Direction of Mining Environmental Affairs of the Peruvian Ministry of Energy and Mines. COMPUMET manager holds PhD in Environment and Sustainable Development, Master in Environmental System Management, Diploma in Occupational Health and Safety Management in Mining.

Sampling points were located by Sotrami environmental professionals in coordination with personnel of ENVIROTEST S.A.C., according to its sampling protocols. ENVIROTEST is an environmental testing laboratory, accredited by IAS (International Accreditation Service) and INACAL (National Institute for Quality).

The standard procedures for monitoring activities related to surface water and environmental monitoring and laboratory samplings protocols include how and where the samples should be taken, preservation techniques, equipment calibration, quality control, chain of custody procedures, shipping instructions, cyanide species to be analyzed and quality assurance and quality control requirements for cyanide analyses.

Examples of completed chain-of-custody forms showing proper use of the forms were reviewed. Maps showing the monitoring locations with respect to cyanide facilities were also reviewed by the auditor.

Sampling conditions as weather, livestock/wildlife activity, anthropogenic influences, etc. and procedures are documented in writing. Sotrami field data sheets for monitoring activities record in writing the weather conditions, ambient temperature, field parameters (i.e., conductivity, pH, temperature), groundwater levels and quantity of water to purge. Completed monitoring field forms were reviewed by the auditor and verified that these conditions are being registered.

The operation monitors for cyanide in discharges of process water to the tailing's ponds and monitors ground water down gradient of the site. Sotrami does not have discharges of process water to surface water from cyanide facilities. The operation has three piezometers to monitor ground water down gradient, which always area dry, according to the monitoring records reviewed. As stated before, groundwater level in the area is estimated to be at a depth of approximately 120 to 130 meters.

The environmental area performs weekly inspections to both the tailings storage facilities, no wildlife mortality was found. The operation stated they have been successful at preventing wildlife mortalities related to cyanide facilities during this certification period.

The inspections forms include items for wildlife mortality, the operation registers wildlife mortality whether it happens or not.

Sotrami monitoring procedures include frequencies for samples conducted at frequencies adequate to characterize the medium being monitored and to identify changes in a timely manner. The frequencies of the monitoring activities were deemed to be appropriate by the auditor.

# Principle 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, livestock, and the environment.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 5.1

Discuss the basis for this Finding/Deficiencies Identified:

The operation has a decommissioning plan Mine Closure Plan of the Santa Filomena II Beneficiation Plant, of January 2021, developed by the external contractor *ACOMISA Asesores y Consultores Mineros S.A*. (ACOMISA), which has the approval of the Ministry of Energy and Mines of Peru. This is a plan for the entire operation closure that includes decommissioning of the cyanide.

The plan addresses the cyanide remaining on site upon cessation of production activities and prepares the site for its closure and post closure period. The plan, along with the procedure PETS-SOT-PLT-037 Dismantling, removal and transfer of equipment and materials in contact with cyanide, describes managing cyanide and cyanide containing process solutions remaining in storage and production facilities in preparation for closure so that they do not present a risk to people, wildlife or the environment due to their cyanide content.

The decommissioning includes activities such as decontamination of equipment, removal of residual cyanide reagents, neutralization of process solutions and installation of measures necessary for control surface water in the tailing's storage facility and monitoring groundwater.

The plan includes a yearly schedule for carrying out its proposed activities. Chapter VIII - Schedule, Budget, and Financial Guarantee of Sotrami´s Mine Closure Plan includes a timeline for the mine´s decommissioning activities.

Progressive Closure: for this stage, it has been taken into consideration that the remaining lifetime of Sotrami is 11 years from 2019. In that sense, the Progressive Closure stage has been scheduled for the year 2020 and 2029.

Final Closure: considers its financial and operational conditions, the final closing stage has been scheduled for the year 2030.

Post Closure: stage where the jurisdictional environmental regulations have been taken into consideration, stating that at least the post-closure stage must be 5 years. The post closure stage has

been scheduled from the year 2031 and ending in the year 2035. The schedule shows the order in which the planned activities will be conducted starting from the point in time the operation ceases production, or an individual cyanide facility is no longer in use.

The operation has made a reasonable attempt at scheduling its decommissioning activities, with the recognition that the schedule may change in the future.

The decommissioning plan and procedures state a written policy calling for such review and revision to keep them current and applicable to the actual ongoing operation as it changes over time. The national regulatory framework provides for the mine closure plan to be constantly reevaluated. This plan will be updated for the first time after 3 years of its approval and, that is to say in the year 2024, and subsequently, every 5 years since the last approved update.

## Standard of Practice 5.2

Establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 5.2

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami's decommission plan includes an estimate of the cost to fully fund third party implementation of the process plant including cyanide-related decommissioning measures. The amount estimated is based on the costs for a third-party contractor to mobilize, conduct the closure activities, and demobilize from the site.

The total cost estimate for the process plant and tailings storage facilities, prepared by the external contractor ACOMISA with current market prices, is of United States Dollar (USD) 798,095. It includes items for the site cyanide-related decommissioning activities and corresponding costs.

Sotrami has to review and update Closure plan, including the cost estimate, at least every five years as stated by the national regulation. Revisions to the plan have been already made due to activities that affect the cyanide-related decommissioning activities and to update the budget for closing its operations.

Sotrami provided proof of having guarantee letters accordingly is required by national regulation, as a guaranteed mechanism to finance the closure of the mine. The beneficiary is the Ministry of Energy and Mines (MEM).

Article 51 of the Peruvian legislation indicates the calculation process to establish the financial guarantee. Based on this, the mine has presented a letter of guarantee in favor of the Ministry of Energy and Mines for USD 153,677.80 corresponding to the Process Plant, valid until February 1, 2024.

Sotrami showed the table with the determination of the annual guarantee of the Mine Closure Plan, a constant value system with inflation corresponding to the "Santa Filomena II" processing plant. in which the remaining useful lifetime indicated is 8 years and begins in 2022. For this reason, a calculation is made of how much will be the amount that has to be constituted from the year 2023, which was USD 153,677.80.

The financial guarantees annually are increasing because the useful life of the project is shortening. The financial guarantees are for the Peruvian state a guarantee that this plant will be closed correctly, the amounts that annually the company Minera Sotrami SA, constitutes in the banking entities are previously reviewed and approved by the competent authority. Once the Mine Closure Plan (Environmental Management Instrument) has been approved, the mining company complies with its first bond letter. In the case of Sotrami, made the first deposit in 2023. Sotrami also showed the projected amounts that the company will guarantee in the coming years. In the year 2030 the final closure begins according to the study.

The Peruvian political jurisdiction in which Sotrami operates requires guarantee letters as financial assurance for the mine decommissioning.

# Principle 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 and control them.

The operation is:

- ✓ in full compliance
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 6.1

Discuss the basis for this Finding/Deficiencies Identified:

The Standard Operation Procedures (SOPs) and plans listed in Standard of Practice 4.1. for the cyanidation operation including unloading, storage and mixing facilities, leach plant, tailing impoundments, among others, describe the control measures that should be conducted to minimize workers exposure. The procedures are operational and describe safe practices, including equipment decontamination with sodium hypochlorite and to monitor for HCN gas prior to maintenance of the equipment which has been in contact with cyanide.

The level of detail in these procedures are commensurate with the risks involved with the task. In addition to the SOPS, the operation has work instructions to enter into confined spaces, training materials and posted signs.

Although the reviewed procedures in general met the Code requirements, some needed to consider additional statements or to be more specific as required by the Code enable a safe operation. After the audit, Sotrami sent the auditor new versions of the procedures incorporating all additional considerations required. No additional action was required.

The procedures require the use of personal protective equipment (PPE) as appropriate and necessary for the operation. The use of PPEs is addressed in SOPs, safety training programs and signs posted in specific work areas.

Where required, the SOPs address pre-work inspections and specialized PPE required, as for unloading and mixing cyanide. All SOPs include tools and considerations of safety and potential physical and chemical hazards associated with the job and procedure. In addition to the use of general PPE, such as hard-hat, steel toes shoes, hearing protection and safety glasses throughout the production area, areas and/or tasks where personnel may come into contact with cyanide have additional PPE requirements.

Observations during the audit confirmed that hard hat, hearing protection, rubber boots, rubber gloves, chemical suits, face shields, approved respirator and rubber rain gear were in use for tasks that were performed at the cyanide mix area.

Sotrami considers its workers input into the development of health and safety procedures through various mechanisms. Workers have direct communication between supervisors and operators during daily toolbox meetings. The mine also receives and considers the opinion of its workers through an employee suggestion mailbox, where employees submit by mean of a drop box located in the process plant. Health and safety matters are discussed in daily shift meetings and regular health and safety management meetings.

## 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
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 6.2

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has evaluated the pH of the operation cyanide solutions to determine the appropriate pH for limiting the evolution of hydrogen cyanide gas and developed operating procedures and controls to reduce risks to its workforce determined the appropriate pH for limiting the generation of HCN gas during cyanide mix and production activities. The operational procedures PETS-SOT-PLT-018 Preparation of cyanide solution requires pH greater than 10 in the cyanide mixing tank; PETS-SOT-PLT-017 Control of operating parameters in leaching requires pH to be 11; PETS-SOT-PLT-027 Preparation of sodium cyanide solution for desorption requires a minimum pH of 12 in the process solution.

The auditor confirmed that the operation implements its procedures to maintain the necessary pH of its process solutions. This includes monitoring pH at the cyanide mixing tank, leaching tanks N° 1 and N° 10, at the output of the 6x8 mill, and at the 0.5 m3 tank for the desorption process. Evidence was found in the above mentioned Standard Operating Procedures; daily operator logs review and through interviews with the process plant operators.

Sotrami has identified the areas where workers may be exposed to cyanide more than 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period. Working and operational areas where potential for worker exposure to cyanide are identified with signals and monitored with portable HCN gas monitoring units.

SOPs have been developed for all activities in which cyanide management is involved. These procedures include a section where the PPE requirements are listed. Signage listing the PPE requirements to enter a cyanide facility has been installed at appropriate entrances. Workers have been alerted to the need for necessary personal protective equipment through use of signage, operating procedures, and training.

During the audit it was not clear what actions the workers had to take when the HCN gas detector alarm was activated at a level of 4.7 parts per million and neither when the second alarm was activated at 10 parts per million, so the auditor required Sotrami to clarify the necessary actions in the respective work procedures.

Soon after the audit, Sotrami revised its work procedures, establishing that when the HCN gas monitor alarm is triggered at 4.7 parts per million, workers must leave the work area and wait until the gas level drops below that level and once the supervisor authorized, they can continue working. When the 10 parts per million alarm is activated, the workers must evacuate the area and the emergency brigade must act with due protection to assess what is causing the gas emission.

The auditor confirmed that the operation has determined the areas and activities where such exposures may occur and require appropriate personal protective equipment, use administrative controls as the SOPs, by observation of signaling installed at these areas and by interview with the workers, confirm that these protective measures are implemented.

Workers use portable HCN gas monitors devices at areas and tasks that may present a risk of concentrations of hydrogen cyanide gas or cyanide dust exceeding 10 ppm on an instantaneous basis or 4.7 ppm at the cyanide unloading and storage area, at the mixing facility, at the mill where high-strength cyanide solution is introduced into the process circuit, at desorption, at the tops of process tanks and for CIL screen-cleaning activities.

Operators have personnel hydrogen cyanide monitors in these locations to confirm that workers are not being exposed to excess cyanide levels in these areas or when performing these tasks. The monitors are set to be alarmed to alert workers of potential instantaneous exposure to 10 ppm and potential exposure to 4.7 ppm.

The operations has written procedures identifying the actions that will be taken in the event that an alarm is triggered, such as evacuations, restrictions on entry, and investigations on cause.

The auditor confirmed this by observation of monitoring equipment, employee interviews and review of records of monitoring results. HCN levels are monitored through MCA portable HCN gas detectors devices. The units are fitted with a visual alarm comprising amber and red lights and an audio alarm. If ambient HCN concentrations above 4.7 ppm are detected, the amber light and sound is activated. The red alarm and sound is activated if HCN levels exceed 10 ppm.

Standard operating procedures requires that in the event of an alarm being triggered at levels above 4.7 ppm, but below 10 ppm, workers should stop the work and stay apart until the level drops below 4.7 ppm. Where HCN levels exceed 10 ppm, requires evacuation of the area.

This requirement was verified through review of procedures, observation of monitors during site inspection, review of calibration records and discussions with maintenance personnel.

Hydrogen cyanide monitoring equipment are maintained, tested and calibrated as directed by the manufacturer. Records of calibration performed every six months were available for the recertification period. Records include the actual calibration information. An external contractor is responsible for the calibration of the HCN monitors.

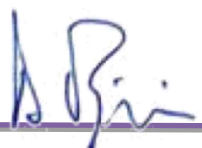
Warning signs are posted in all areas where cyanide is present advising workers that cyanide is present and that smoking, open flames and eating and drinking are not allowed, and that, if necessary, suitable personal protective equipment must be worn. The signs are in Spanish, which is the language of the workforce. The PPE requirements are also posted in each area. Verification was through visual inspection of the signs located in areas where cyanide solution is prepared and used.

Interviews with site personnel and review of the overall safety and training programs with respect to cyanide safety may also confirmed the workforce has been adequately alerted to the presence and risks of cyanide.

High-strength cyanide solutions contain red colorant dye for clear identification when observed out of proper containment and for clear differentiation with other solutions or rainwater that may be present. Dye is added at a concentration that provides a clear visual indicator of the presence of high-strength cyanide solution. Dye is included in the cyanide bags so is incorporated at the time of mixing, so that the resultant cyanide solution is dyed. The auditor reviewed the SDS information for the delivered cyanide and by observation of pink colored reagent-grade process solution added at mill number 1.

Sotrami has installed 4 emergency showers and eye wash stations, and a series of fire extinguishers at strategic locations throughout the operation in all areas where there is a potential for exposure to cyanide.

The auditor checked all showers and eyewashes during the site tour to verify functionality and observed that two of the eye wash stations had excessive water pressure had. In addition to fix this, the auditor required Sotrami to review its inspection checklist for these items sin order to include a field where water pressure is checked. Soon after the audit Sotrami correct this issue and no additional action was required.



Fire extinguishers are inspected and tested monthly. The auditor randomly checked fire extinguishers to confirm they are an acceptable type for use with cyanide. All extinguishers observed were fitted with inspection tags, which documented monthly inspection checks.

The operation has identified the tanks and pipes that contain cyanide solution. Tanks are identified with the safety diamond, also known as NFPA Code 704 (National Fire Protection Association), symbol used internationally to indicate the level of risk that a chemical substance or compound may pose to human safety and health. The high strength cyanide solution tank is also identified with the Substance information for UN 3414 - Sodium cyanide solution based on the Hazardous Materials Table (Title 49 CFR 172.101) and a signal announcing tank containing cyanide.

The pipes containing cyanide are identified in white letters as “cyanide solution” indicating the direction of cyanide flow to reduce the potential for releases and exposures during maintenance. Labeling provide workers and any contractor with notice that a dangerous material is present as necessary to protect their health and safety. The operation’s overall safety and training programs also informs about signaling in tanks and pipes containing cyanide solutions.

In occasion of the audit, during the walkthrough at the process plant, the auditor noticed pipelines containing cyanide lack signaling. Likewise, the tanks manhole missing signaling as confined space. During the audit process on-site, Sotrami complied with adequately signal all the remaining pipes and tanks manholes announcing confined space.

Verification of this requirement was through observation of the cyanide piping and tanks at the facility, which included following the reagent pipelines from the mixing tank to the locations that the cyanide is added to the production circuit.

Sotrami has available printed Safety Data Sheets (SDS) and first aids procedures in areas where cyanide is managed. AII information relating to cyanide management including SDS information, SOPS and emergency response plans are provided in Spanish, the workforce language at the site. Employees receive training on the use and interpretation of SDS.

Sotrami has developed and implemented the procedure PETS-SOT-PLT-044 Investigation of accidents and/or dangerous incidents, to investigate and evaluate incidents including cyanide exposure incidents to determine if the operation’s programs and procedures to protect worker health and safety, and to responds to cyanide exposures, are adequate or need revising. The procedure documents the requirements for incident reporting and investigation to determine the basic causes of the incident, provide remedial action and medical attention and ensure that a similar incident does not reoccur.

Incidents, occupational injuries, occurrences of property damage, loss to process and near misses are reported. Reporting is required immediately on occurrence to a supervisor who is then required to complete a written report by shift end. The incident report is assessed further at incident report meetings.

AII incidents are investigated in accordance with mine´s guideline with root cause analyses completed. Incidents are retained on the database for categorization and aid in prevention of reoccurrence. The system is used to record health and safety related incidents only. Although no cyanide incidents have been reported during this recertification period, the auditor reviewed

incidents investigations and evaluations performed for non-cyanide related incidents. This practice was also confirmed by interviews with workers and safety personnel as evidence.

## Standard of Practice 6.3

Develop and implement emergency response plans and procedures to responds to worker exposure to cyanide.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 6.3

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has made available antidote kits, water, oxygen, resuscitators, radios, telephones, and alarms in the process plant and medical room. Oxygen bottles, resuscitators, first aid kits and self-breathing apparatus are located in the medical room at the process plant. The location of the emergency equipment was deemed to be appropriate for the operation.

Operators are required to carry a radio while performing their tasks. They also have push buttons alarm that activates a siren. Verification was conducted by visual inspection of the cyanide antidote kits and interviews.

The cyanide antidote kit consists of a Cyanokit 5g (hydroxocobalamin) for intravenous use. It was verified to be within the range of the expiring date and stored at adequate temperature in the medical room, stored within the regulated temperature range as required by the manufacturer. Cyanokit will be administered only by certified medical personnel. The operation has on site a doctor and a nurse, both licensed to administer intravenous medicines.

Verification was by visual examination and interview with process personnel and onsite doctor and nurse. Medical oxygen is available in the medical room and at the ambulance. The auditor also verified that the operation has a manual resuscitator available and a CPR face mask that can be used with medical oxygen to resuscitate patients that are not breathing. Trauma kits are kept within the medical room and in the ambulance. The auditor considers the operation has the necessary equipment for emergency response to a worker exposure to cyanide.

Showers and eye-wash stations are located at strategic areas of the plant where cyanide and other chemicals are used.

The operation inspects its first aid equipment regularly to ensure that it is available when needed, materials such as the cyanide antidote is stored as directed by the manufacturer and will be replaced on a schedule to ensure that it will be effective when needed. The auditor reviewed inspection records to its first aid team covering the recertification period.

First aid equipment is monthly checked by Health, Safety and Environmental (HSE) officers and biweekly by medical personnel, as per interviews with Sotrami personnel. This includes inspections

of cyanide antidote kits, oxygen bottles, emergency shower and low-pressure eyes wash stations, ambulance, and medical items.

The operation has developed the specific written procedure PETS-SOT-PLT-063 First aid for cyanide poisoning detailing the necessary response to cyanide exposure through ingestion, inhalation and absorption through the skin and eyes. The procedure is in the medical room which is located 30 meters from the process plant. On any emergency the doctor or nurse will be present in minutes at the site. Another procedure from the medical area is PETS-SOT-PLT-060 Administration of oxygen therapy.

The medical procedures also include the PETS-SOT-PLT-062 Monitoring during the preparation of sodium cyanide. According to the provisions of the mine, in each cyanide solution preparation operation, a member of the medical service must be present with oxygen on hand as remote observer, ready to assist on any emergency.

The operation has its own on-site capability to provide first aid and medical assistance to workers exposed to cyanide. Sotrami has one doctor and a nurse at the process plant, available 24 hours. Also has an ambulance at the plant and other at the mine site.

The mine has first aid room equipped with cyanide antidote kits, oxygen, first aid kit and a resuscitator (defibrillator). Has an ambulance service ready to provide basic Life Support Service.

The PETS-SOT-PLT-064 Evacuation and transfer of the injured, describes the procedure to transport workers exposed to cyanide to locally available qualified off-site medical facilities. If a cyanide exposure victim requires medical attention beyond the capabilities of the on-site medical facilities, the ambulance maintained at the site will transport the victim(s) to Nazca, 2 hours' drive from the process plant, or Ica a 3 hour drive.

Sotrami has a dedicated ambulance and in the event of an emergency the medical personnel will stabilize the patient and, if necessary, will transport the patient to Nazca or Ica.

Sotrami showed records of communications with Jaqui town medical center located at 20 minutes' drive from the process plant, also showed interaction with the *Señor de Luren* hospital at Ica. The auditor reviewed letters between Sotrami and the hospital *Señor de Luren*, where the hospital confirms the medical facility has adequate, qualified staff, equipment, and expertise.

The hospital informed has the conditions in technical teams and professionals trained in the care of cyanide poisoning in cases of accidents or incidents due to contact and / or intoxication, as well as complementary management and subsequent observation. They inform that the hospital is constituted as a Referential Hospital at the level of the Region of Ica, because is accredited with Category 11-2 of the MINSA (Ministry of Health), considered the one with the greatest resolution capacity.

# Principle 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 7.1

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has developed the Emergency Response Plan (ERP) PL-SOT-SST-02 Cyanide Emergency Response Plan complemented by Standard Operating Procedures, Operating Plans, Contingency Plans, First Aid and Safety Procedures, among others:

- P-SOT-PLT-002 Fire response
- P-SOT-PLT-003 Emergency evacuation response
- P-SOT-PLT-004 Tailings Dam Collapse Response
- P-SOT-PLT-006 Emergency medical care
- P-SOT-PLT-008 Emergency Response with hazmat
- P-SOT-PLT-010 Emergency care with sodium cyanide

On the occasion of the documents review related to the emergency response during the audit, it was found the following gaps regarding to the Code requirements:

Detail specific emergency response actions to cyanide spill scenarios: solid and solution spills and cases of cyanide exposures. Detail how spills will be collected, where it will be put and what its final disposal will be.

Also was required to describe in detail, response actions for the following emergency scenarios identified:

- transport accidents occurring at or near the mine site. Clarify responsibilities and define the necessary actions to take;
- HCN emissions during fires and explosions;
- Spills due to failures in pipes, valves and tanks; and
- uncontrolled seepage detected in the tailing's storage facility.

After the audit, Sotrami considered and evaluated these scenarios in the ERP, describing the necessary response actions required on this audit finding. After sending the new version of the ERP

and records of changes being communicated to its workforce, no additional information was required to find this in compliance with the Cyanide Code.

The ERP considers different scenarios appropriate to the site-specific circumstances and includes procedures to responds to emergency incidents including cyanide releases. Emergency scenarios considered include releases during loading/unloading; releases during fires and explosions; catastrophic hydrogen cyanide leaks from process facilities and accidents during transport; pipe, valve, and tank ruptures; pump failures; water recovery systems from the tailings storage facility; and failure of tailings impoundments. A power outage scenarios is not considered an emergency situation related to cyanide during the process plant operation, as this will not originate a spill or exposure to the workers, due to the nature of the operation in leaching tanks. Also, for the case of cyanide treatment and destruction systems as this is not done at Sotrami.

The Plan addresses the potential release scenarios at the site in a realistic manner and with an appropriate degree of specificity. The ERP and complementary documents adequately describe how response actions are to be accomplished and describe specific response actions for the site. The scenarios addressed in the emergency planning documents are appropriate.

The auditor considers the emergency response documents address those release scenarios that may reasonably be expected to occur and result in significant impacts to its workers, community, and environment, as applicable to the site-specific features of the operation and its environmental setting.

Sotrami ERP and the cyanide transporter contingency response plan address releases during transport of reagent cyanide to the site. In the event of a transport accident occurring in the proximity of the mine, at a distance where Sotrami can reasonably provide support, they will go to the emergency scene to coordinate support actions for the transporter. In the event of a transport accident that occurred within the limits of the mine site, Sotrami will directly intervene in the emergency response.

Planning for response to transportation-related emergencies considers the transportation route, physical and chemical form of the cyanide, truck transportation, the condition of the road and the design of the transport vehicle. The cyanide carrier contingency plan from Lima to the mine site has been included as an annex in the mine´s ERP. Sotrami receives the GPS communication from the carrier about the exact location and location of the cyanide transport along the route from Lima until its arrival at the mine, on each cyanide shipment. The auditor reviewed the carrier notification emails.

The emergency response planning documents address the types of releases and responses that are reasonably expected to occur at the operation and include sufficient details so that personnel know the specific actions they are expected to take in response to the emergency.

The Plan describe specific response actions to evacuate the site personnel. The plan does not consider evacuating potentially affected communities from the area, as Jaqui, the nearest population located 10 km downstream from the plant site. There is no open water in the area, is an extremely arid zone, and any spill will remain in the mine site area.

The procedure SOP P-SOT-PLT-010 0 Emergency care with sodium cyanide address and first aids measures for cyanide exposure emergencies as decontamination of the victim, oxygen administration, cardiopulmonary resuscitation (CPR), and Cyanokit antidote administration, among other first aids procedures. The location of cyanide emergency equipment including eye wash stations, emergency showers and the antidote kit is detailed in the Plan.

The plan details responses to cyanide spills or leaks including mill solution and reagent spills and makes provision for initial response, first aid, spill reporting contacts and spill control and cleanup. To address high-strength cyanide solutions, the Plan identifies the critical valves to close and switches of pumps to shutoff, so that worker exposure to reagent-strength cyanide can be halted immediately.

The operation performs visual inspections for leak detection and collection at the tailing's ponds; inspects pipelines, pumps and valves for deterioration and leakage; and the tailings ponds for cyanide containment and available freeboard. As for the diversion of waters and although it is in a very arid zone, the mine ensures that the seasonal stream adjacent to the plant is free of obstacles and prepared to function properly in the event of any eventual rain.

As a recommendation to improve, the auditor advises Sotrami to perform frequent inspections of the gates installed in the containment areas of the leaching tanks, to ensure that they are closed and thus avoid spills into the environment. Also, in this sense, influence in inspections to ensure secondary containments are always free of storage objects obsolete objects.

## Standard of Practice 7.2

Involve site personnel and stakeholders in the planning process.

The operation is:

- ✓ in full compliance
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 7.2

Discuss the basis for this Finding/Deficiencies Identified:

The operation has involved its workforce and stakeholders in the cyanide emergency response planning process. Among the mechanisms used by Sotrami to obtain input from his workers, including emergency response, are the daily pre-work meetings, the monthly meetings with the Health and Safety (H&S) Committee and the H&S meetings with contractors. Monthly meetings are also scheduled to discuss any topic related to health and safety issues, including changes to the ERP. By interviews with site personnel the auditor confirmed workers have the opportunity to confirm the operation involved its workforce in the cyanide emergency response process.

Regarding off-site stakeholders, Sotrami interacts as much as possible with community representants of Jaqui which have received a copy of the mine's emergency plan for informational purposes only as they would not have any leading role. External entities such as fire departments and police area not considered in the ERP. Local medical center of Jaqui has been trained by the

mine medical personnel in first aid por cyanide exposures. The mine also interacts with hospitals from Nazca and Ica, located at 2- and 3-hours' drive, respectively.

Although is not considered the nearest community of Jaqui could be potentially affected, its authorities and the medical center have been made aware of the nature of the risks associated with accidental cyanide releases at the mine site and consulted with them directly regarding appropriate communications.

The auditor reviewed evidence meeting records with the Jaqui authorities and the local medical center, also a report from the visit made to the city of Ica Regional Hospital.

The Emergency Response Plan only designates specific response roles for medical facilities, as external responders. These responders have been involved in the emergency planning process. The external medical facilities will receive any victim of an on-site exposure, they have first-hand knowledge of the site and the available resources and have interacted with Sotrami regarding the specific procedures to be used.

Regarding consultation with stakeholders to keep the ERP current, Sotrami states in its Plan, that only his own trained personnel will participate in an emergency response: Crisis Committee, coordinators, and brigades, who respond to emergencies at the Plant. No external responder has designated responsibility during an emergency inside the plant site.

## Standard of Practice 7.3

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

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 7.3

Discuss the basis for this Finding/Deficiencies Identified:

The ERP provides primary and alternate contact details for the emergency management team members, including the Plant Manager who has authority to ensure that sufficient and adequate resources are allocated to carry out the ERP. Sotrami has formed a Crisis Committee composed of few members, in order to ensure an agile functioning of one's own circumstances. It is responsible for coordinating the human, logistical and technological resources to be mobilized in any type of emergency. The Crisis Committee together with the Emergency Response Team (ERT) are in charge of coordinating the actions that will be carried out before, during and after the emergency. It is conformed as shown below.

| | |
|---|---|
| Chairman of the crisis committee | Operations manager. |
| Field Coordinator 1 | General manager |
| Field Coordinator 2 | Head of H&S |
| Field Coordinator 3 | Head of medical area |

| | |
|---|---|
| Brigade commander | Chief of benefit plant. |
| Brigade | Leader chiefs of shifts A, B, C |
| Brigadists | 5 workers from each shift. |

The ERT members are listed in the Plan and organized as ERT for spills, for first aids and evacuation, to transfer a patient to the medical center and for firefighting. The team members are indicated by name, position in their job and in the ERT, and shift. Contact telephone numbers is provided for all the ERT members and management team.

Sotrami has set out the annual training requirements for the ERT in the Plan's Annex 8:

- hazardous Materials (HAZMAT) product management;
- spill management;
- emergencies due to nature disasters;
- medical emergencies;
- evacuation of victims;
- fire control;
- rope rescue;
- emergency response plan;
- emergency protocols; and
- functions and responsibilities of the crisis committee.

The Plan include call-out procedures and 24-hour contact information for the coordinators and response team members. The first witness will inform the Chief of Guard or Supervisor on duty about the accident that occurred, taking into account the level of the emergency who in turn will inform the Brigade Commander about the occurrence of the accident if the case so requires (emergency level 2 or 3). The Brigade Commander will assume control of the emergency and will be responsible for acting immediately, if the accident also warrants it; communicate to the Crisis Committee.

The Plan specifies the duties and responsibilities of each of the coordinators (Crisis Committee) and for the emergency response team members in Section 6 of the Plan.

There is complete list of the emergency response equipment, including its the location, in Annex 4 of the Plan, including full face respirators Tyvec suits, neoprene and nitrile gloves, rubber boots, brooms, shovels, plastic bags, yellow warning tape, dry chemical power type fire extinguishers, among other.

The Plan include procedures to periodically inspect the emergency response equipment to ensure its availability. It is the responsibility of the H&S area to pass periodic inspections to the emergency response teams and in terms of medicines and first aid equipment, it is the responsibility of the medical area to carry out frequent inspections.

Sotrami ERP do not considers the participation of external responders or the communities during a cyanide emergency response on site, due to the geographical isolation of the mine site. The Plan only considers evacuating any victim to medical centers, in Jaqui, Nazca or Ica, depending on the magnitude of the emergency.

The medical centers above mentioned are made aware of the roles assigned to them in the Emergency Response Plan. Their participation function is limited to receiving, treating, and stabilizing the patients evacuated from the mine site.

The auditor reviewed records of meetings, confirmation that these entities were sent copies of the Emergency Response Plan, and interviews with on-site personnel.

## Standard of Practice 7.4

Develop procedures for internal and external emergency notification and reporting.

The operation is:

- ✓ in full compliance
- ☐ in substantial compliance
- ☐ not in compliance

with Standard of Practice 7.4

Discuss the basis for this Finding/Deficiencies Identified:

The Plan include procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency. It identifies the ERT members, and the team they belong to. The Security Control Center at the mine site maintains a detailed emergency contact list of all stakeholders. The Emergency response organization details the emergency response system organizational chart.

The Plan addresses notification to the public and communication with the media. Section 7 states that communication to the authorities that would involve the emergency, will be made only by the President of the Crisis Committee in coordination with the Committee and General Management. It includes a Communication Diagram to the Authorities Involved. The Plan includes contact information for communicating with the media regarding cyanide incidents.

During the audit, the requirement to notify the International Cyanide Management Institute (ICMI) in the event of any significant cyanide incident was not stablished. Subsequently, Sotrami sent the new version of the ERP including the requirement for notifying the ICMI of any significant cyanide incidents, as defined in ICMI's Definitions and Acronyms document. No such significant cyanide incidents have occurred needing to report the ICMI.

# Standard of Practice 7.5

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

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 7.5

Discuss the basis for this Finding/Deficiencies Identified:

During the review of the Emergency Response Plan on occasion of the audit, it was found the Plan did not address with sufficient detail the remediation issues as appropriate for the likely cyanide release scenarios to recover or neutralize spilled cyanide solutions or solids, for the decontamination of soils or other contaminated media, and for handling and disposal of waste after cleaning up the spill. Sotrami was required to take corrective actions since this was declared a Substantial Compliance. After the audit, Sotrami sent the revised version of the emergency response plan, PL-SOT-SST-02 Cyanide Emergency Response Plan (ERP). Emergencies considered in this Plan include solid cyanide spillage (discharge, storage, transfer/handling), sodium cyanide solution and pulp spillage (sodium cyanide preparation tank and leach tanks), first aid (inhalation, ingestion, contact and injury), and fires, among others. Annex 6 of the Plan complements these actions by duly detailing the required actions in the procedure PRT-SOT-PLT-010 Emergency response to sodium cyanide, and procedure P-SOT-PLT-008 Spill management emergency response with to hazardous materials. These procedures detail the necessary remediation actions as appropriate for the likely cyanide release scenarios.

Both procedures PRT-SOT-PLT-010 Emergency response to sodium cyanide and procedure P-SOT-PLT-008 Spill management emergency response with hazardous materials require to cover the product with awnings or other elements, to build berms with earth and stones to prevent the product move to water courses in case of rain and thus preventing any cyanide solution from reaching the sewers or gutters. It states the necessary personal protection (PPE) equipment to wear, precautions to measure HCN gas levels, to work wind on your back. Requires to immediately collect the spilled sodium cyanide with shovels and wheelbarrows, to dispose the recovered material to the plant process and to put any cyanide contaminated materials and soil into plastic bags and barrels labeled as containing cyanide to store them in the designed area for hazardous waste, separated from any incompatible substances, to later be evacuated from the area by the authorized hazardous waste contractor that will carry it to the authorized landfill for this type of material.

The spill area will be decontaminated with commercial solution of sodium hypochlorite at 5%, located in the container which is stored together with all emergency response equipment in a container for this purpose which is located in the process plant about 20 meters from the cyanide

mixing area. Any contaminated water used to clean tools and equipment used in the emergency, will be conducted to the emergency pond, then will be pumped into the plant process.

The final concentration allowed in residual soil as evidence that the release has been completely cleaned up is set according to stablished by the Peruvian Environmental Quality Standards (ECA due to its acronym is Spanish), for soil in extractive industries. This value is set in 8 mg/kg (dry weight) for free cyanide. The ECA states testing methods EPA (United States Environmental Protection Agency) 9013 SEMWW-AWWA-WEF 4500 CN F; or ASTM D7237; and/or ISO 17690:2015. The procedure includes how samples will be taken.

Remediation measures regarding drinking water supply it is not applicable to Sotrami operation as release from the operation would not adversely impact a drinking water supply. The plant is located in an arid area, underground water is around 120 m depth. The plant is supplied with fresh water through a channel that carries water for several kilometers from a spring located in the upper part of the basin. Drinking water is supplied through bottled water.

During the review of the emergency response plan, it was found that they omitted the prohibition of the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water or that has the potential to reach surface water. Although there is no open water in the surroundings, in the case of seasonal avenues where the adjacent stream is activated, Sotrami was required to include this prohibition. After the audit, the operation include this prohibition in Section 5.2.1 of its emergency response plan, resulting in compliance with this requirement of the Code.

The Emergency Response Plan calls for sampling the soil after cleaning any cyanide release immediately at the place, as detailed above. There are no open water in the surroundings, ground water in the area, as mentioned in Standard of Practice 4.5, is estimated to be at a depth of approximately 120 to 130 meters. To the extent practical, the potential need for environmental monitoring to identify the extent and effects of a cyanide release is covered in the emergency response plan.

## Standard of Practice 7.6

Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 7.6

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami reviews and evaluates the cyanide related elements of its Emergency Response Plan for adequacy on a regular basis. Section 2 of the Plan requires this review and revision once a year or when new activities are incorporated that cause new potential risks in the processes. Information

such as the names and contact information for Emergency Response Coordinators and Emergency Response Team members are updated as needed to ensure its accuracy.

The auditor confirmed that such a review and revision has been conducted during this recertification period reviewing the recently dated 2022 Emergency Response Plan and records of previous plan versions.

Sotrami conducted cyanide related mock drills in 2021 and 2022 to test response procedures for cyanide exposure scenarios, with 12 and 15 participants, respectively. Verification was through photos and reports of the mock drills performed. In both cases it was an emergency of cyanide spill with intoxication while mixing sodium cyanide in the preparation tank. The reports include detected improvement opportunities, recap meetings where they assigned corrective actions which have been completed.

The Emergency Response Plan itself calls for an evaluation of the Plan following emergency mock drills and any emergency that required its implementation. No such reviews of the plan were conducted following mock drills since after the emergency response drills, the corrective actions and the improvement opportunities identified did not consider it necessary to modify the emergency response plan. No cyanide emergencies occurred during this certification period.

# Principle 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 8.1

Discuss the basis for this Finding/Deficiencies Identified:

Sotrami has the written training program F-PRO-SST-02 Annual Training Program of Occupational Health and Safety Activities and training materials that provide all personnel who may encounter cyanide with training in recognizing the cyanide materials present at the operation, the health effects of cyanide, the symptoms of cyanide exposure, and the procedures to follow in the event of exposure.

The auditor reviewed the training materials in Power Point presentations to verify that cyanide hazards are adequately addressed, requiring to include in the new workers training Sodium Cyanide Handling, Storage and Management, photos of cyanide briquettes and reddish cyanide solution.

Soon after the audit, Sotrami included this requirement into the training material and communicated its work force regarding this additional information to recognize cyanide.

New workers at the mine receive orientation training in accordance local regulations, the auditor reviewed workers assistance records and interviewed employees confirming they receive this training.

Records of refresher training in cyanide hazard recognition were reviewed covering the recertification period. Annual refresher training in cyanide hazard recognition is be provided to all employees. The Annual Training Program schedules annual refresher training to all personnel, in Segregation of Waste Contaminated with Sodium Cyanide; First Aid in Case of Cyanide Poisoning; Containment of Solid Sodium Cyanide Spills and Cyanide Pulp.

The auditor verified that refresher training is being conducted by reviewing training materials and training records and interviewing personnel in the field.

The operation retains the training records pertaining to cyanide hazard recognition and was able to demonstrate with training assistance records those personnel received both initial and refresher training in cyanide hazard recognition.

## 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

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 8.2

Discuss the basis for this Finding/Deficiencies Identified:

All workers at the mine receive training to perform their normal production tasks in accordance local regulations, which include SOPs for cyanide management. Verification was by interviews with field personnel engaged in cyanide management activities and review of the operation's training materials.

The operation's training program identifies the specific cyanide management elements that each employee must be trained in to properly perform the required tasks The training elements necessary for each job involving cyanide management are also identified in the Standard Operation Procedures. There is an identification list of the important elements that must be conveyed to employees regarding how various cyanide-related tasks must be performed.

Appropriately qualified personnel provide task training related to cyanide management activities. Training on specific tasks is provided by the plant supervisors. These are considered qualified to

provide training based on experience. This requirement was verified by interviews with plant supervisors to determine their level of expertise in operating the facilities and in training.

According also to local regulations, aII employees receive their task training before being allowed to work with cyanide in an unsupervised manner. This is a standard practice, included in the mine´s Internal Work Regulations. Verification was by interview with field and supervisory personnel.

By interviews with supervisory personnel, the auditor confirmed that refresher training on cyanide management is provided to ensure that employees continue to perform their jobs in a safe and environmentally manner. These are informal evaluations of how well employees perform their assigned tasks.

Th operation evaluates the effectiveness of their task training. Evaluation method is by observation of employees performing their tasks after initial training. The auditor verified such evaluations from interviews with site personnel. These are informal evaluations of how well employees perform their assigned tasks.

Sotrami showed individual employment files documenting the training they receive. Records include the names of the employee and the trainer, the date of training, the topics covered, and if the employee demonstrated an understanding of the training materials.

## Standard of Practice 8.3

Train appropriate workers and personnel to responds to worker exposures and environmental releases of cyanide.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 8.3

Discuss the basis for this Finding/Deficiencies Identified:

Employees working in areas where cyanide is present as unloading, storage, mixing, production and maintenance personnel is trained in rescue and decontamination procedures if they observe a cyanide release or exposure, as they would be the most likely to be the first on the scene if a release occurs. However as the medical center is located about 100 meters from the cyanide mixing area, the operation address emergency response by requiring personnel observing an exposure incident to call for the assistance of the medical personnel. Also, as mentioned before Sotrami has arranged for the doctor or medical technician on duty to be present observing at each event of cyanide solution preparation, with oxygen on hand.

The auditor reviewed the operation’s training program, procedures and plans determining the operation’s response program is structured and if personnel involved in unloading and mixing cyanide, cyanidation processes, and maintenance of cyanide facilities have received the appropriate level of training to provide first aid considering that medical help would be immediately present. The

implementation of this provision was verified through interviews with field personnel and review of training records.

Sotrami's emergency response brigades are trained in the emergency procedures included in the Emergency Response Plan regarding cyanide and the use of the necessary response equipment, which as mentioned in Standard of Practice 7.3, is basic equipment. Verification of this requirement was through interviews with these personnel and review of their training records.

Sotrami has made emergency medical services from Jaqui, and hospitals at Nazca and Ica, familiar with those elements of the Emergency Response Plan related to cyanide, with the purpose of informing them that they could eventually transfer intoxicated workers to their medical centers. The Plan do not consider the participation of any other external responders as fire brigades because they are far from the site.

The operation has retained reports of meetings and emails with the emergency medical services for the review of the auditor.

All employees with designated roles and responsibilities working in areas where cyanide is present as unloading, storage, mixing, production and maintenance personnel, receive annual refresher training in rescue, decontamination of potential workers exposed to cyanide, and cyanide release scenarios to remind them of the required procedures, including communication to medical services. Verification was through interviews with these personnel and review of training records.

The operation retain all records of emergency response 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. This information provided the auditor evidence that the operation is providing initial and refresher training in response to cyanide exposures and releases for appropriate personnel, has made designated response personnel familiar with implementation of the Emergency Response Plan, and required designated responders to demonstrate their understanding of the training material.

# Principle 9, Dialogue

Engage in public consultation and disclosure.

## Standard of Practice 9.1

Promote dialogue with stakeholders regarding cyanide management and responsibly address identified concerns.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 9.1

Describe the basis for the Finding/Deficiencies Identified:

In 2021 this work was carried out through the person in charge of community relations. Also, in 2021, installed the panel sign at the community "The company listens to you" along with a suggestion box so that they could express any concern. The auditor reviewed the list of queries made by the residents, which are followed up until to close them, however, none were related to any concern about the use and management of cyanide, in general, it referred to work requirements, among others.

For year 2022 the operation had not provided the stakeholders with information about their cyanide management practices. Sotrami informed that communication with the residents of this community has been delicate since in the face of any interaction, they asked for donations to the town and although the operation has collaborated a lot, they always are asking for more.

Sotrami was required to find the right way and manage to interact and inform the community about their operations in the process plant.

On January 11, 2023, Sotrami performed a participatory workshop in Jaqui "Good Practices in Cyanide Management", about the cyanide practices in the process plant and the standard of the Cyanide Code. The workshop was attended by authorities such as the lieutenant governor and residents of Jaqui. The auditor reviewed photos and assistance records as evidence of compliance with this requirement of the Code, finding it compliant.

## Standard of Practice 9.2

Make appropriate operational and environmental information regarding cyanide available to stakeholders.

The operation is:

✓ in full compliance

☐ in substantial compliance

☐ not in compliance

with Standard of Practice 9.2

Describe the basis for the Finding/Deficiencies Identified:

In addition to the workshop, provided with information on cyanide management practices and procedures. Sotrami developed written descriptions of cyanide management activities in Spanish the local language and make these descriptions available to communities and stakeholders. As evidence the auditor reviewed a diptych and a bulletin "What is Cyanide," including pictures of distribution of this informative material during the workshop.

According to the National Institute of Statistics (INEI), the illiteracy rate in Ayacucho was 11.7% in 2017. During the workshop performed in January 2023, the operation disseminated information in verbal form, where a professional community relations officer was in charge of disseminating oral information reading the content of the written material and the Power Point presentation.

In case of a cyanide release or exposure incidents, cyanide releases off the mine site requiring response or remediation and cyanide releases on or off the mine site resulting in significant adverse effects to health or the environment, Sotrami will have to notify governmental agencies of a release exceeding the applicable regulatory threshold, requiring response or remediation. In the same way, is required to report any cyanide exposure resulting in hospitalization or fatality, as part of applicable governmental reporting requirements. These reports are public information as they are published in the respective governmental agencies' websites.

No such information has been publicly available as during this certification period no cyanide incident exposures or releases needing to report the authorities have occurred.