



Ricardo
Energy & Environment

ICMC Bulyanhulu Gold Mine Recertification Summary Audit Report

Summary Audit Report

Report for Bulyanhulu Gold Mine Ltd

Customer:

Bulyanhulu Gold Mine Ltd

Customer reference:

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12 June 2019

Ricardo Energy & Environment reference:

Ref: ED12148- Issue Number 2

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1 Summary Audit Report for Gold Mining Operations

Name of Cyanide User Facility:	Bulyanhulu Gold Plant
Name of Cyanide User Facility Owner:	Acacia Mining Plc.
Name of Cyanide User Facility Operator:	Acacia Mining Plc.
Name of Responsible Manager:	Emmanuel Muchunguzi, Plant Metallurgist
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2 Location Detail and Description of Operation

The Bulyanhulu gold mine is located in north west Tanzania, in the Kahama district of the Shinyanga region, approximately 55 kilometres south of Lake Victoria and approximately 150 kilometres south west of the city of Mwanza the second largest city in Tanzania.

The Bulyanhulu process plant has the capacity to process an average of approximately 3,300 tonnes of ore per day (approximately 1.1 million tonnes per year) operating 24 hours a day on a 365 day per year basis.

The mine consists of an underground mine, a process plant, waste rock dumps, tailings containment, water management ponds and associated facilities. The mine is an underground trackless operation. The underground operations ceased in June 2017 due to the Tanzanian Government ban on the export of copper and gold concentrate.

Bulyanhulu life-of-mine is currently estimated to be in excess of 25 years, based on its proven and probable gold reserves of 7.64 million ounces.

Process Plant Description

Prior to the cessation of the underground operations the run of mine, after being hoisted from underground operations is crushed in a jaw crusher before milling in an open circuit semi-autogenous grinding mill.

The feed ore to the Plant from the underground operations contained gold, silver and copper. The feed grade was between 6.5 – 10.0 g/t of gold and 0.3 – 0.5% of copper. The sulphide minerals mined were mainly pyrite (FeS₂) and chalcopyrite (CuFeS₂). The Plant recovered these valuables using gravity and flotation processes. Free milling gold and electrum particles were recovered using gravity techniques and intensive cyanide leaching reaction followed by electro-winning to produce doré bars.



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The primary cyclone overflow was sent to rougher flotation from where the tailings were thickened and disposed of to the tailings dam or as backfill. The rougher concentrate was classified to produce a cyclone overflow which went to four stage re-circulating concentrate cleaner cells.

The first stage cleaner tail was cleaned in scavenger cells, the concentrate from which is returned to the second cleaner stage. The cleaner scavenger tails stream was fed to a Carbon In Leach (CIL) plant for gold extraction to produce doré for sale. The rougher concentrate cyclone underflow reported to a flash flotation cell, the tailings of which were reground before joining the rougher concentrate, and the concentrate of which was cleaned in a flash flotation cell to produce final concentrate.

The concentrate thickener received the final sulphide and the underflow was pumped to a Larox filter via a stock concentrate storage tank to produce a cake of 8.0 -10.0% moisture content. The final concentrate was loaded into containers. Bulyanhulu Process Plant produced between 40.0 – 70.0 tonnes of concentrate per day. The copper concentrate contained approximately 200.0 -280.0 g/t gold, 200.0 – 250.0 g/t silver and 11.0 – 25.0% copper. The recovery varied between 85.0 – 93.0% for gold and 75.0 – 95.0% for copper.

In July 2014, a new Carbon in Leach (CIL) Plant was commissioned to treat the re-mined tailings from the old TSF(Tailings Storage Facility) and also the Cleaner Scavenger Tailings which initially were treated in the old CIL Plant. After cyanidation process in the CIL circuit, the final tailings are detoxified to destruct cyanide to less than 50ppm weak acid dissociable (WAD) cyanide before discharging into TSF 4. The feed to the CIL plant is made up of 1.2 million tonnes of reclaimed tailings from the old tailings (TSF 1&2) and 121kt of cleaner scavenger tailings in a year. The CIL plant operating 24 hours a day on a 365 day per year basis at 92% availability.

The tailings re-mining is done using high pressure water and then the slurry is pumped to the new CIL Plant for gold extraction through cyanidation leach process. The water recovered from the re-mined slurry (through thickening) is pumped back to the reclamation plant for reuse. The operation of tailing re-mining process and TSF 4 is managed by Fraser Alexander Tailings (FAT) as the operator.

The use of paste tailings in the design of the Tailings Facility at Bulyanhulu was largely to do with the amounts of water that could be recovered inside the process, compared to that of a conventional tailings facility and the requirement to produce Paste Backfill product for Underground. Waste products are filtered and transported as paste for tailings deposition and placement of backfill.

Surface tailings deposition is based on building a stable stack using end-of pipe paste discharge from multiple deposition points. The paste is currently being deposited on a combined surface area of approximately 50 ha. The facility includes a stormwater run-off trench, a sedimentation pond and two return water ponds

The process used in the Bulyanhulu Process Plant is a three-stage process which consists of: (a) Thickening stage which is performed by conventional thickeners that raise the slurry density to approximately 55% solids, (b) Filtration where a filter cake is produce with 76-77% solids and (c) Paste conditioning where the filter cake is re-pulped in a paddle mixer, which produces a consistent paste product of 75% solids and a 10-inch (250mm) slump.

The paste being generated, with a consistent 75% solids, offers a great saving of water to the process and advantages such as:- reduced risk (paste is stable at deposition point and highly unlikely to liquefy); low cyanide contaminated water seepage to the environment; access time onto the tailings surface is greatly reduced; low footprint (area of the dam) of the tailings area as stacking is possible, the stability



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of the paste reduces the costs associated with building a conventional dam; and reclamation of the dam can be initiated while the dam is still functional. Bulyanhulu needs to produce paste for its underground mining activities.



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SUMMARY AUDIT REPORT**AUDITORS FINDINGS**

	<input checked="" type="checkbox"/> in full compliance with	The International Cyanide Management Code
Acacia Bulyanhulu Gold Plant is:	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	
Audit Company:	Ricardo-AEA Ltd	
Audit Team Leader:	Ed Perry, Lead Auditor	
Email:	ed.perry@ricardo.com	

There has been one cyanide incident since the last recertification audit.

Wildlife mortalities due to cyanide or any chemicals are reportable to the Tanzanian Government.

The auditors observed the incident investigation and report for 8 dead Marabou's found in the CIL pregnant tank bund area after an emergency incident that resulted in pregnant solution spilling into the bund after a seal become defective.

A letter was sent to the Director General National Environment Management Council (NEMC), 28 April 2018 - Incident Notification - Mortality of eight birds (Marabou Storks) at Bulyanhulu Gold Mine. There were no follow up actions from the NEMC. Following this incident the bund is inspected daily for any leaks.

The inspection records since the last recertification audit were observed and this was the only wildlife incident associated with cyanide. This was also verified with personnel interviews as well as a review of all the environmental department reports issued following a record of wildlife mortality.

NAME OF OTHER AUDITORS

Marie Schlechter, ICMI pre-certified Mine Technical Specialist

DATES OF AUDIT

The Re-certification Audit was undertaken between 12 November 2018 and 16 November 2018.

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code. Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.



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The “International Cyanide Management Code For The Manufacture, Transport, And Use Of Cyanide In The Production Of Gold and Silver” (the Code) was developed by a multi-stakeholder Steering Committee under the guidance of the United Nations Environmental Program (UNEP) and the then, International Council on Metals and the Environment.

The Code is a voluntary industry programme for gold mining companies, and companies involved with the production and transport of cyanide to gold and silver mining companies; it focuses exclusively on the safe management of cyanide. Companies that adopt the Code must have their operations, which manufacture cyanide, transport cyanide or use cyanide to recover gold and silver, audited by an independent third party to determine the status of the Code’s implementation. Those operations that meet the Code’s requirements can be certified and are able to use a unique trademark symbol, which identifies the company as a certified operation. Audit results are made public to inform stakeholders of the status of cyanide management practices at the certified operation.

The objective of the Code is to improve the management of cyanide used in gold and silver mining and assist in the protection of human health and the reduction of environmental impacts (refer to www.cyanidecode.org). The Code is managed by the International Cyanide Management Institute (ICMI).

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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 manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 1.1 to purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

The operation's contract with Orica requires that the cyanide is produced at a facility that has been certified as being in compliance with the Code.

Purchase Contract for the supply of Sodium Cyanide, Barrick Global Entities and Orica Limited. Signed 29 July 2016. Extended to 31 December 2019 via Second Amendment.

Section 13 stipulates that the seller shall implement in respect of its own operations and the operations of its transportation subcontractors, the provisions of the Seller's International Cyanide Management Code Compliance - Orica Mining Chemicals. The Seller shall comply with the current and future recommendations of the ICMC during the contract term, including all recommendations relating to sodium cyanide manufacturing, handling storing, packaging, labelling, transporting and emergency response.

Orica have their own certified production facility in Yarwun, Australia. The facility was recertified on 29 October 2013 and again on 22 February 2017.

Samsung is an independent distributor of cyanide sourcing sodium cyanide briquettes from certified producers - Tongsoh production facility (recertified 23 March 2017) or TaeKwang production facility (recertified 19 June 2017). Samsung Africa Supply Chain (recertified 30 January 2018) includes the Port of Pusan, South Korea, ocean transport by shipping companies MSC, Maersk and Safmarine, the Ports of Takoradi and Tema in Ghana, Conakry in Guinea, Dakar in Senegal, and Mombasa in Kenya, and Dar Es Salaam in Tanzania, with subsequent road transportation to various mine sites by Code certified transporters.

Solid cyanide was purchased from Samsung on an ad-hoc basis during 2016 through issuing a purchase order for each load.



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Principle 2 – Transportation

PROTECT COMMUNITIES AND THE ENVIRONMENT DURING CYANIDE TRANSPORT

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 2.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The contract with Orica International PTE Ltd includes transportation and the delivery of the cyanide to the mine site. Orica uses Freight Forwarders Tanzania for the transportation of solid cyanide, from the port of Dar es Salaam to the Mine. Freight Forwarders Tanzania (FFT) was initially certified on 22 May 2008 and most recently was recertified on 31 July 2018.

The contract with Orica designates responsibilities for the following:

- a) Packaging as required by the United Nations for international shipments and by the political jurisdiction(s) the shipment will pass through.
- b) Labelling in languages necessary to identify the material in the political jurisdiction(s) the shipment will pass through, and as required by these jurisdiction(s) and by the United Nations (for international shipments).
- d) Storage prior to shipment.
- e) Evaluation and selection of routes, including community involvement.
- f) Storage and security at ports of entry.
- g) Interim loading, storage and unloading during shipment.
- h) Transport to the operation.
- i) Unloading at the operation.
- j) Safety and maintenance of the means of transportation (e.g. aircraft, vessels, trains, etc.) throughout transport.
- k) Task and safety training for transporters and handlers throughout transport.
- l) Security throughout transport.
- m) Emergency response throughout transport.

The contract has not, as yet, designated responsibility for c) the addition of the colorant dye, although in practice this responsibility rests with the mine.



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Solid cyanide was purchased from Samsung on an ad-hoc basis during 2016 through issuing a purchase order for each load.

Samsung is an independent distributor of cyanide sourcing sodium cyanide briquettes from certified producers - Tongsuh production facility (recertified 23 March 2017) or TaeKwang production facility (recertified 19 June 2017). Samsung Africa Supply Chain (recertified 30 January 2018) includes the Port of Pusan, South Korea, ocean transport by shipping companies MSC, Maersk and Safmarine, the Ports of Takoradi and Tema in Ghana, Conakry in Guinea, Dakar in Senegal, and Mombasa in Kenya, and Dar Es Salaam in Tanzania, with subsequent road transportation to various mine sites by Code certified transporters. FFT was used for transportation to Bulyanhulu Gold Plant.

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 2.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operations contract with the solid cyanide supplier requires that the transporters be certified under the Code.

The auditors observed the following:

Purchase Contract for the supply of Sodium Cyanide, Barrick Global Entities and Orica Limited. Signed 29 July 2016. Extended to 31 December 2019 via Second Amendment.

Section 13 stipulates that the seller shall implement in respect of its own operations and the operations of its transportation subcontractors, the provisions of the Seller's International Cyanide Management Code Compliance - Orica Mining Chemicals. The Seller shall comply with the current and future recommendations of the ICMC during the contract term, including all recommendations relating to sodium cyanide manufacturing, handling storing, packaging, labelling, transporting and emergency response.

Solid cyanide was purchased from Samsung on an ad-hoc basis during 2016 through issuing a purchase order for each load.

Samsung and Orica both use FFT as the transport subcontractor. FFT was initially certified on 22 May 2008 and most recently was recertified on 31 July 2018.

The operation has chain of custody records identifying all elements of the supply chain (producer, transporter(s), interim storage facilities) that handle the cyanide brought to its site, and all transporters are certified in compliance with the Code.



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Principle 3 – Handling and Storage

PROTECT WORKERS AND THE ENVIRONMENT DURING HANDLING AND STORAGE

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 3.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.1 to design and construct unloading, storage and mixing facilities consistent with sound accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.

The facilities for unloading, storing and mixing cyanide have been designed and constructed in accordance with cyanide producers' guidelines, applicable jurisdictional rules and/or other sound and accepted engineering practices for these facilities.

It was stated in the previous recertification audit that a new cyanide mixing plant was constructed as part of the new CIL Plant which was built and commissioned in June 2014. The Plant was designed by MDM Engineering. This was included in the previous recertification audit.

Unloading and storage areas of solid cyanide are located away from people and surface waters.

Only solid cyanide is transported to the mine.

There is a method to prevent the overflowing of cyanide storage tanks. There is a high high alarm and an automatic cut off for the mixing tank when adding the water at 75%. This allows sufficient room for 7 boxes of solid cyanide to be added without a risk of the tank overflowing.

Following a mixing event the cyanide solution is transferred to the cyanide storage tank. This tank has a high alarm at 90% and a high high alarm and automatic cut off at 95%. The alarms show up on the Supervisory Control and Data Acquisition (SCADA) in the control room.

Planned Maintenance is undertaken using Pronto Xi software that lists all of the Plant that undergoes regular maintenance, including the tank overflow instrumentation to confirm it is functioning properly.

The cyanide mixing and storage tanks are located on concrete within a concrete bunded area that can prevent seepage to the subsurface and provides a competent barrier to leakage. They also have ventilation pipes at the top of the tanks.

The solid cyanide boxes are stored in a warehouse, which has a roof, solid sides, ventilation slots, and concrete floor and concrete hump at the entrance to prevent any rainwater from entering the warehouse. The warehouse is located within the gold plant, which is fenced and access controlled. This is located within the wider mine site, which is also fenced and access controlled. The cyanide is stored separately from incompatible materials.



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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 3.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Procedures are in place and implemented to prevent empty cyanide containers from being used for any purpose other than holding cyanide.

Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, Rev 00, 12 June 2018 instructs employees to rinse the bag thoroughly using a hose to wash out any residue of cyanide, then place the bag in the respective empty cyanide box. Procedure states that all discarded packages and personal protective equipment (PPE) must be placed inside an empty cyanide box. This includes the plastic liner and wrapping, cut banding, and any used tyke overalls. Put the lids back on the cyanide boxes. Using the forklift the empty boxes are moved to the designated temporary storage area ready for disposal in the on-site incinerator.

Incinerator Operation (Macro Burn V330B) Safe Work Procedure, BUL-PRP-PRO-0229, Rev 00, 12 June 2018. Procedure describes the required PPE and process to follow when burning cyanide waste (and other waste) in the on-site incinerator.

The operation has developed and implemented plans or procedures to prevent exposures and releases during cyanide unloading and mixing activities.

Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, Rev 00, 12 June 2018. Procedure describes the operation of valves (manual water dilution valve 4167-V03, valve 4167-V76, valve 4167-XCV-04) during the mixing operations. The procedure states the required PPE to be worn during manual cyanide mixing, in addition a competent third operator must be assigned to act as a sentry during a mixing event. The sentry is responsible for observing cyanide mixing from a safe distance and for notifying the Control Room Operator and shift supervisor in case of an emergency. The procedure states that 4 cans of red food dye (carmoisine) must be added to the cyanide mixing tank at the time when the caustic is added, prior to adding the cyanide.

New CIL Unloading Sodium Cyanide Boxes, BUL-PRP-PRO-0240, Rev 00, 12 June 2018. Procedure describes the safe handling of cyanide containers when offloading and moving using a forklift.

New CIL Unloading Sodium Cyanide Boxes, BUL-PRP-PRO-0240, Rev 00, 12 June 2018. Procedure states that stacking of cyanide boxes must not exceed four boxes high.

Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, Rev 00, 12 June 2018. Procedure states that the area will be hosed down after mixing. Hosing must be directed toward the bund and sump pump.



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Sodium Cyanide Mixing Plant (Area 4167) Cleaning Cyanide Dry Spill Safe Work Procedure, BUL-PRP-PRO-0263, Rev 00, 12 June 2016. Procedure describes the process to follow to control, contain and clean up dry cyanide spillage that occurred during the movement of the cyanide boxes.



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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 preventative maintenance procedures.

in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Written management and operating plans or procedures have been developed for cyanide facilities including unloading, mixing and storage facilities, and tailings impoundments include the following: 54 cyanide procedures related to the management and operating of cyanide facilities inside the plant; 19 TSF operating procedures; and Bulyanhulu Gold Mine, Tanzania, Operation, Maintenance and Surveillance Manual - TSF Cell No. 4, SLR, Project No. 710.02028.00006, Report No. 4, Rev 4, January 2017.

The operation has a number of procedures identifying assumptions and parameters for design and operation of the cyanide facilities, including: Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, Rev 00, 12 June 2018. Ensure that the water pH for Mixing NaCN is > pH 11; CIL Circuit Start Up Safe Work Procedure, BUL-PRP-PRO-0153, Rev 00, 9 June 2018. Slurry pH is maintained above 10.5; New CIL Cyanide Detoxification Process Upset Safe Work Procedure, BUL-PLO-PRO-0063, Rev 01, 26 January 2018.

Detox operating targets:

- Detox tank 1, pH 8.5, PPM Cyanide WAD <300
- Detox tank 2, pH 8.5, PPM Cyanide WAD <20.

Detox upset situation is present once one of the following conditions are present, confirm the presence of the conditions below:

- The concentration of free cyanide in CIL tank #07 is above 800ppm.
- The concentration of WAD cyanide in any Detox tank which feeds Detox tank #04 is above 50ppm (Detox tanks in Series configuration);
- Concentration of spigot discharge in deposition area is above 50ppm.

Bulyanhulu Gold Mine, Tanzania, Operation, Maintenance and Surveillance Manual - TSF Cell No. 4, SLR, Project No. 710.02028.00006, Report No. 4, Rev 4, January 2017.

- Design storm depth - 252 mm (24 hr 1:100 year);
- Design freeboard TSF - 0.8 m minimum total freeboard;



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- design freeboard return water dam 3 (measured from spillway invert to embankment crest) - 1m.
- process water quality arriving at TSF - WAD cyanide <50 ppm, pH 8-10.

Bulyanhulu is operating with a number of inspections and checklists, as well as preventive maintenance activities describing the standards and practices necessary for the sound operation of the cyanide facilities, including the specific measures needed for compliance with the Code.

Plant Inspections include the following:

- CIL Logsheet, Inspection of pH and NaCN ppm at CIL every 2 hours.
- New CIL & Detox Shift Start Checklist. These check the following: HCN detectors, safety showers and eye wash, leakages on reagent dosing lines, leakages in critical valves, wildlife mortalities pH readings in Detox and CIL Tanks, various valves, WAD analyser, bund condition of Detox.
- New CIL Elution Shift Start Checklist. These check the following: check level of Cyanide and Sodium Hydroxide (Caustic Soda) in discharge solution, ensure all manual valves required are either closed or open, inspect all bunds and note any spillage or dead birds, check safety showers and eye wash stations.
- CIL Reagents Mixing Check-up List, (includes the cyanide mixing and storage tank area). These check the following: HCN detector; safety showers and eye wash; reagent mixing and storage bund clean and free of flakes and solution; wildlife impacts (dead bird or other animals), check for pumps and valves status, check for any leakages in tanks, pipes, valves and pumps, check bund status, inspect respective PPE's required for reagent mixing.

Planned Maintenance is undertaken using Pronto Xi software that lists all of the Plant that undergo regular maintenance. All ad-hoc maintenance is also recorded in the database.

Thickness testing of CIL tanks is currently undertaken annually by the internal team and by independent consultants. Thickness testing of Cyanide Storage and Mixing Tanks are not currently undertaken due to the age of the facility (constructed in 2014).

TSF Inspections include the following:

- Daily Inspections include the following: leaks on pipes, seepage, spillages, wildlife, rainfall, and cyanide gas.
- Monthly Inspection Reports include the following: delivery lines, penstock, catwalk, walls seepage, sloughing, spillage, pool and wildlife.
- Quarterly Site Inspections include the following: includes environmental issues, slurry delivery, basin slope, freeboard, deposition, pool control, penstock, under drains, and return water dams.
- Annual Report on the Operation and Monitoring of the Bulyanhulu Tailings Storage Facility No.4 for the Period January - December 2016, dated Sept 2017, includes review of design and operational criteria information, review of operational parameters and monitoring data, review of TSF operation.

These inspections include; leak detection and collection systems, and any surface water diversions.

The operation inspects cyanide facilities on an established frequency sufficient to assure and document that they are functioning within design parameters. The inspections are documented, including the date of the inspection, the name of the inspector, and any observed deficiencies; the nature and date of



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corrective actions and records are retained. Deficiencies picked up during an inspection will be rectified via an ad-hoc job card as part of the preventative maintenance system.

The operation has a procedure to identify when changes in a site's processes or operating practices may increase the potential for the release of cyanide and to incorporate the necessary release prevention measures. Acacia Mining Management of Change, Request for Change & Functional Area Review, FOR-OHS-0001, Rev 01, 04 June 2018.

Final approvals for change implementation is signed off by Head of Department, General Manager, and Regional Manager. The discipline specific impact questions, are completed by the Functional Area Representative, e.g. Environment, this indicates if the person participated in the formal risk assessment, completes the review date, and can add any comments.

There are a number of procedures in place for contingencies situations such as upset in TSF water balance, temporary closure, or when inspections or monitoring identifies a problem, including the following: New CIL Elution Cycle (Elution Sequence and Shut Down) Safe Work Procedure, BUL-PRP-PRO-0237, Rev 00, 12 June 2018; Detox Circuit Operation & Shutdown Safe Work Procedure, BUL-PRP-PRO-0234 (these two procedures include contingency procedures for situations when a temporary closure or cessation of operations may be necessary), New CIL Circuit Start-up (Area 4131) Safe Work Procedure, BUL-PRP-PRO-0261, Rev 00, 12 June 2018; Rev 00, 12 June 2018; CIL Emergency action procedure to an area known or assumed to have high HCN level, BUL-PRP-PRO-0171, Rev 00, 09 June 2018; CIL Cyanide Detoxification Process Upset Safe Work Procedure, BUL-PRP-PRO-0168, Rev 00, 09 June 2018; CIL Circuit Start Up Safe Work Procedure, BUL-PRP-PRO-0153, Rev 00, 09 June 2018; CIL Circuit Shutdown Safe Work Procedure, BUL-PRP-PRO-0154, Rev 00, 09 June 2018; Bulyanhulu Gold Mine, Tanzania, Operation, Maintenance and Surveillance Manual - TSF Cell No. 4, SLR, Project No. 710.02028.00006, Report No. 4, Rev 4, January 2017.

The operation has the necessary emergency power resources to operate pumps and other equipment to prevent unintentional releases and exposures in the event its primary source of power being interrupted. The mine has 31 diesel generators that can power the entire mine operations. The back-up generating equipment is maintained and tested through the Proton Xi Enterprise Management System.

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation conducts a program to determine appropriate cyanide addition rates in the mill and evaluate and adjust addition rates as necessary when ore types or processing practices change cyanide requirements.



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Bottle roll tests are undertaken - when mining underground was operational it was done almost every day. Currently bottle roll tests are only undertaken twice a month due to re-mining operations which does not result in any significant changes in the feed material.

The current setpoint at 500 - 600 ppm is lower than when processing ore from underground because there is a lot less copper present in re-mining tailings material. When treating underground ore there is a lot of copper giving rise to a high cyanide consumption with a set point of approximately 1200ppm.

Daily samples are taken from CIL tanks 1 - 4, and tank 7 - analysed by SGS to determine the amount of free cyanide. Solid samples are analysed for gold content. Solution samples are analysed for Free CN.

The current bottle-roll tests are used to confirm the setpoint and gold recovery since the material does not vary much coming from the TSF re-mining operations.

The operation evaluated various control strategies for cyanide additions as detailed in the following reports.

Acacia Mining, CIL Extended Leaching Report, Prepared by Emmanuel Muchunguzi, 2017. Testing was conducted to ascertain the optimal Cyanide concentration and pH in the CIL plant. A composite sample from the CIL plant was analysed on a monthly basis.

Test work included:

- Direct cyanidation tests (DCN)
- CIL bottle-roll tests; and
- pH modification tests.

Bulyanhulu Gold Mine, Ore Source pH and Cyanide Consumption Test Work Report, prepared by Raymond Zackeyo, March 2015. Bulyanhulu CIL plant receives its feed from three different ore sources, namely Lower mine, upper east and tailings reclamation (TSF). Cyanide and pH optimization are the key elements in processing plant. Test work was done on different ore sources so as to know different ore source kinetics for better gold recovery.

Test work included:

- Bottle roll tests were conducted on different ore sources for 24 hrs;
- Cyanide and lime reagents were added depending on the ore kinetics so as to get a desired gold dissolution and recovery;
- Carbon addition was kept constant for all test works.

The operation has implemented a strategy to control its cyanide addition.

Primary control is the TAC 1000 automated cyanide analyser, setpoint is set and automatically controls the addition of cyanide to ensure addition as per the set point.

The manual samples taken every 2 hours are compared to the SCADA reading from the TAC 1000.



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Standard of Practice 4.3: Implement a comprehensive water management programme to protect against unintentional releases. in full compliance with

The operation is

 in substantial compliance with

Standard of Practice 4.3

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

The operation has developed a comprehensive, probabilistic water balance.

There are weekly water management meetings with discussions on water issues and data is received from various people to update the model.

Weekly and monthly water data is sent to the consultant to update the model. The upgraded model is provided to the mine on a monthly basis. This includes the model that was run as well as a report.

The auditors observed the following:

Piteau Associates, Technical Memorandum, 30 October 2018, Bulyanhulu Mine: October 2018 water balance model update and predictions.

The water balance was constructed in version 12.1 of the GoldSim software platform. Goldsim is an analytical modelling package which allows the simulation of highly dynamic flow and associated chemical network systems such as a site-wide water and chemical mass balance. The latest Gold Sim model for the site is Bulyanulu_GoldSimWaterBalancec_ObservedData_Nov 09 2018.

The water balance includes the following:

- rates at which tailings are deposited into tailings storage facilities;
- precipitation, evaporation, and seepage rates (including 1 in 100 year, 24 hour storm event);
- undiverted runoff from external catchment areas;
- potential power outages; and
- percentage saturation in the tailings.

There are no discharges to surface water and the effects of freezing and thawing are not applicable.

The operating procedures incorporate inspection and monitoring activities to implement the water balance and prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment including the following:

The survey department surveys the return water dams and the TSF pond levels on a weekly basis. The auditors observed the relevant reports.

The ponds and pond levels are inspected visually on a weekly basis by the Environmental Department.

Ponds and impoundments are designed and operated with adequate freeboard above the maximum design storage capacity determined to be necessary from water balance calculations.



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The TSF is operated with a freeboard of 1.5m. The return water dams are operated with a 1m freeboard below the spillway.

The operation measures precipitation, compares the results to design assumptions and revises operating practices as necessary.

It was observed in the Water Balance Report, that is received on a monthly basis from the consultant, that the rainfall data is compared with the dam capacities and predicted water usage and recommendations are made to revise operating practices to prevent any spillage to the environment.

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.4**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has attempted to maintain the WAD cyanide levels in all open waters below 50 mg/l.

WAD sampling is done on a monthly basis at the return water dams and underdrain water. The auditors observed data for March 2015 to September 2018 for all of these areas and all of the monitoring showed WAD cyanide levels to be less than 50 ppm.

Daily WAD sampling is conducted by the TSF personnel at the TSF water pool and the spigot, with the analysis being undertaken by SGS.

The auditors observed data for 1 January 2016 to 2 November 2018. The 50 mg/l WAD cyanide limit was exceeded on 10 days in 2016, 3 days in 2017, and 8 days in 2018.

In the event that the WAD analyser detects high levels of WAD cyanide in the final detox tank, the plant is stopped and a manual bird scarer is used to chase away any birds from the TSF. An investigation is then undertaken as to why the levels are being exceeded. The auditors observed the document 'High WAD CN Spikes at TSF - Reasons, Remedial Actions and Status'. The root causes of exceedances were extremely variable but were often associated with issues in the dosing system, oxygen plant, and detox plant. Where applicable, following rectification, engineering works or increased inspections were undertaken to prevent any reoccurrence.

Maintaining a WAD cyanide concentration of 50 mg/L or less in open water has been effective in preventing significant wildlife mortality. The daily inspections showed no wildlife mortalities at the TSF or return water ponds.



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

The operation is

 in substantial compliance with

Standard of Practice 4.5

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

There is no direct discharge to surface water and no indirect discharge to groundwater or surface water.

Standard of Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater. in full compliance with

The operation is

 in substantial compliance with

Standard of Practice 4.6

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

The operation implements specific water management measures to manage seepage to protect the beneficial uses of groundwater beneath and/or immediately down-gradient of the operation.

The TSF and the 3 Return Water Dams are all HDPE lined. The TSF is equipped with drains that recover any seepage which reports to the No. 1 and 2 return water dams.

The TSF pipeline trench is HDPE lined.

WAD cyanide concentrations (or other species of cyanide for which there is a numerical standard established by the applicable jurisdiction) in groundwater down-gradient of the facility at or below levels that are protective of identified beneficial uses of groundwater.

There is no specific legal standard for cyanide in groundwater in place but the drinking water standard is 0.2 mg/l CN (Tanzania Bureau of Standards - National Environmental Standards Compendium - it is not stated whether this is total, WAD or free cyanide.) All groundwater monitoring data was below 0.05 mg/l WAD cyanide

Tailings that were used for backfill until September 2017 when underground mining ceased, did not contain any cyanide since it was coming from the flotation circuit prior to the CIL process.

The mine does not use mill tailings for underground backfill.


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

The operation is

 in substantial compliance with**Standard of Practice 4.7** not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

Spill prevention or containment measures are provided for all cyanide unloading, storage, mixing and process solution tanks

It was confirmed during the site inspection that all tanks (cyanide mixing, storage, CIL, Detox and residue, elution, process water tank) are located inside concrete bunds.

The tanks are all constructed with concrete bases.

Secondary containments for cyanide unloading, storage, 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, and with additional capacity for the design storm event.

All cyanide tanks are equipped with adequate secondary containment.

Spill prevention or containment measures are provided for all cyanide process solution pipelines to collect leaks and prevent releases to the environment.

The tailings pipelines are all contained in a HDPE lined trench, including the return water pipeline.

At the TSF the pipelines are placed within berms that would direct any spillage towards the TSF.

The pipelines are inspected by the TSF personnel as part of the daily inspections.

The reagent strength cyanide pipelines are inside a launder, equipped with a spillage return line towards the cyanide storage bund, in areas where it crosses unlined earth. The rest of the pipelines run over bunds / concrete areas.

Pipelines are inspected as part of the daily inspections and preventative maintenance system.

There were no areas where the cyanide pipelines could present a risk to surface water and therefore no special protection needs are required.

Cyanide tanks and pipelines are constructed of materials compatible with cyanide and high pH conditions.

All tanks and pipes inside the plant have been constructed from mild steel.

The TSF pipelines and return water pipelines are all made from HDPE.


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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.8**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.8 to implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications

Quality control and quality assurance programs have been implemented during construction of all new cyanide facilities and modifications to existing facilities, including cyanide unloading, storage, mixing facilities and other cyanide facilities.

A new Plant was constructed in 2014. This was included in the previous audit with details of the QA/QC undertaken.

Since the previous recertification audit in 2015 the only new facility that has been constructed are two wall lifts for the TSF. Lift 1 was undertaken in July 2017 and Lift 2 was undertaken in June 2018. The QA/QC documents of the two Lifts were observed during the audit including following: Bulyanhulu Tailings Disposal Facility - Wall Development Project, Fraser Alexander, April 2017; Final Completion Certificate - Cladding Works for TSF 4 Wall Lifting Phase 1 - 14 Jan 2018 signed on behalf of Kascco (contractor) and Bulyanhulu; As built drawing for Tailings Dam Cell 4, 2nd Lift - 26 July 2018; As built drawing for Tailings Dam Cell 4, 1st Lift - 10 July 2017; and Kascco construction method statement.

The quality control and quality assurance programs addressed 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 TSFs, and for construction of cyanide storage and process tanks.

Quality control and quality assurance records been retained for cyanide facilities.

Appropriately qualified personnel reviewed the construction of the cyanide facilities and provided documentation that the facility has been built as proposed and approved.

The previous certification audit confirmed that there was documentation that the facility had been built as proposed and approved.

Lift 1 and Lift 2 were completed for the TSF with internal Bulyanhulu Engineers having reviewed the construction and signed off the as-built drawings as evidence of approval.

There is quality control and quality assurance documentation or as-built certification for all cyanide facility construction as detailed in the certification audit and for the alterations to the plant since the last recertification audit.

Quarterly and Annual TSF inspections are undertaken by SLR (a firm of international environmental and engineering consultants).



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Standard of Practice 4.9: Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality. in full compliance with

The operation is

 in substantial compliance with

Standard of Practice 4.9

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

The operation has developed written standard procedures for monitoring activities. - Water Sampling Procedure, BUL-ENV-PRO-0001, Rev 02, 18 May 2018.

The procedure was reviewed and approved by Rebecca Stephen, Chief Advisor Environment, Permitting and Mine Closure. BSc Environmental Engineering from University of Dar es Salaam; MSc Environmental Management, Cranfield University; and Over 10 years' experience in Environmental Management.

Procedures specify how and where samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions, and cyanide species to be analysed. There is also a map of the sampling points.

Sampling conditions (e.g., weather, livestock/wildlife activity, anthropogenic influences, etc.) and procedures are documented in writing.

There are no discharges to surface water.

The operation inspects for, and records wildlife mortalities related to contact with and ingestion of cyanide solutions. The TSF is inspected daily for wildlife mortalities. Plant operators observe the plant during all shifts and will report wildlife mortalities to the Environmental Department.

Wildlife mortalities due to cyanide or any chemicals are reportable to the Tanzanian Government.

The auditors observed the incident investigation and report for 8 dead Marabou's found in the CIL pregnant tank bund area after an emergency incident that resulted in pregnant solution spilling into the bund after a seal become defective. The inspection records since the last recertification audit were observed and this was the only wildlife incident associated with cyanide.

A letter was sent to the Director General National Environment Management Council (NEMC), 28 April 2018 - Incident Notification - Mortality of eight birds (Marabou Storks) at Bulyanhulu Gold Mine. There were no follow up actions from the NEMC. Following this incident the bund is inspected daily for any leaks.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner. Surface water monitoring is conducted quarterly; groundwater monitoring is conducted quarterly; WAD cyanide sampling is conducted daily at the spigot and the supernatant pool; and sampling of the return water dams is conducted monthly and quarterly.



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Principle 5 – Decommissioning

MANAGE CYANIDE PROCESS SOLUTIONS AND WASTE STREAMS TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 5.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has developed written procedures for the effective decommissioning of cyanide facilities at the cessation of operations - Acacia Mining PLC, Bulyanhulu Gold Mine, Standardised Cyanide Decontamination and Decommissioning Plan, Rev 3, October 2018.

Section 7 of the Standardised Cyanide Decontamination and Decommissioning Plan contains a preliminary Decommissioning and Decontamination Schedule starting with actions required from 24 months before closure.

The decontamination and decommissioning plan will be revised / updated after every three years in line with the Mine Closure Plan.

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 5.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has developed an estimate of the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in the site's closure plan.

The mine's closure costing is done annually by MESA an external consultant.

The following was observed: MESA, Update of Closure Cost Estimates for Bulyanhulu Gold Mine: 2017. (closure costing for 2018 financial year).

The closure cost estimate is updated annually by MESA and reviewed by SRK consulting.



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Memo, SRK Consulting, Assurance on Acacia Mining Liability Assessment, 10 December 2017 was also observed.

Acacia Mining has an Insurance Guarantee in place to make provision for part of the closure costs as identified in the closure costing, and as required by the Ministry of Energy and Minerals. This is detailed in an agreement between the Ministry of Energy and Minerals and Bulyanhulu Gold Mine Limited, 14 December 2016.

The guarantor has agreed to post the Rehabilitation Bond in favour of the Beneficiary for the obligations of the Licensee which shall be available for the purpose of financing the costs of rehab and making safe the mining area on termination of mining operations. The Guarantor is Metropolitan Tanzania.

Acacia Mining has self guaranteed to cover the remaining cost of decommissioning activities after the subtraction of the guarantee.

The auditors observed the following: Acacia Mining IFRS - ARO Change Approval Form (U.S. \$), African Region, Bulyanhulu Mine, 31 December 2017. Signed off by the Chief Environmental Advisor, Regional CFO and Regional CEO on 10 January 2018.

Bulyanhulu Gold Mine Limited Financial Statements for the year ended 31 December 2016. The financial statements were authorised for Issue by the Board of Directors on 25 June 2018 and were signed on its behalf by Asa Mwalpopo (Director).

Independent auditor's report to the Shareholders of Bulyanhulu Gold Mine Limited, Report on the audit of the financial statements prepared by Price Waterhouse Coopers, Certified Public Accountants, Dar es Salaam, signed by Patrick Klambi, TACPA, 25 June 2018 confirmed the accounts as accurate.



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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 measure as necessary to eliminate, reduce and control them.

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 6.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.1 to identify potential cyanide exposure scenarios and take measure as necessary to eliminate, reduce and control them.

The operation has developed procedures describing how cyanide-related tasks such as unloading, mixing plant, operations, entry into confined spaces, and equipment decontamination prior to maintenance should be conducted to minimise worker exposure.

CIL Reagents and Water Inline Strainers Cleaning Safe Work procedure, BUL-RPR-PRO-0155, Rev 00, 09 June 2018.

CIL Tank Draining and Cleaning for Inspections Safe Work Procedure, BUL-PRP-PRO-0156, Rev 00, 09 June 2018.

CIL Reagent Line Flushing for Maintenance Safe Work Procedure, BUL-PRP-PRO-0158, Rev 00, 09 June 2018.

Determination of WAD Cyanide by Picric Acid method Safe Work Procedure, BUL-PRP-PRO-0170, Rev 00, 09 June 2018.

Incinerator Operation (Macro Burn V330B) Safe Work Procedure, BUL-PRP-PRO-0229, Rev 00, 12 June 2018.

New CIL Unloading Sodium Cyanide Boxes, BUL-PRP-PRO-0240, Rev 00, 12 June 2018.

Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, Rev 00, 12 June 2018.

Cyanide Titration Safe Work Procedure, BUL-PRP-PRO-0259, Rev 00, 12 06 2018.

New CIL Reagent Tank Drain & Clean for Inspection Safe Work Procedure, BUL-PRP-PRO-0265, Rev 00, 12 June 2018.

Dragger Monotox HCN Monitor Operation Safe Work Procedure, BUL-PRP-PRO-0266, Rev 00, 12 June 2018.

Critical Risk Control Standard Confined Space, ACA-CRCS-ST10-0, Rev 0, 25 January 2016.

It was observed that the procedures include the required PPE as well as pre-work inspections.



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The operation implements procedures to review proposed process and operational changes and modifications for their potential impacts on worker health and safety, and incorporate the necessary worker protection measures.

Acacia Mining Management of Change, Request for Change & Functional Area Review, FOR-OHS-0001, Rev 01, 04 June 2018.

The operation solicits and actively considers worker input in developing and evaluating health and safety procedures.

Employees are consulted during the weekly safety meeting on any new or changed procedures.

The Training Department is responsible for the updating of procedures. All feedback from the employees is provided to the Department for inclusion in the procedures.

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.

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 6.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.2 to operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

The operation has determined the appropriate pH for limiting the evolution of HCN gas during mixing and production activities. CIL Circuit Start Up Safe Work Procedure, BUL-PRP-PRO-0153, Rev 00, 09 06 2018. States that slurry pH is maintained above 10.5. Detox 1 and 2 is maintained above pH 8.5.

Where the potential exists for significant cyanide exposure, the operation uses ambient or personal monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas and sodium, calcium or potassium cyanide dust to 10 ppm on an instantaneous basis and 4.7 ppm continuously over an 8-hour period, as cyanide. The operation uses personal monitors. Alarm A1 is set at 4.7 ppm and alarm A2 is set at 10 ppm. The associated actions are, 4.7 ppm retreat 15 meters while a review of the process is undertaken, 10 ppm go to emergency assembly point. There are 21 personal monitors, includes the TSF personnel.

The operation has identified areas and activities where workers may be exposed to cyanide in excess of 10 ppm on an instantaneous basis and 4.7 ppm continuously over an 8-hour period, and require use of personal protective equipment in these areas or when performing these activities. Hydrogen cyanide monitoring equipment maintained, tested and calibrated as directed by the manufacturer, and records are retained for at least one year.



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Warning signs have been placed where cyanide is used 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.

High strength cyanide solution is dyed during mixing for clear identification

Showers, low pressure eye wash stations and dry powder fire extinguishers are located at strategic locations throughout the operation and they are maintained, inspected and tested on a regular basis.

Unloading, storage, mixing and process tanks and piping containing cyanide are identified to alert workers of their contents, and is the direction of cyanide flow in pipes designated. This includes TSF and cyanide solution pipelines.

It was confirmed that MSDS and first aid procedures are available in English and Swahili in the areas where cyanide is managed.

Procedures are in place and being implemented to investigate and evaluate cyanide exposure incidents to determine if the operation's programs and procedures to protect worker health and safety, and to respond to cyanide exposures, are adequate or need of revising.

Investigations Procedure Manual, Rev 3, 27 November 2014 describes the processes and protocols used by members of the Mine Investigations Group (MIG) when carrying out their duties. It describes the type of investigations, incident scene attendance and examination, case file management, interviews, report writing, records management.

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 6.3**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

It was confirmed that the operation has water, oxygen, available at unloading, storage and mixing locations and elsewhere in the plant.

Antidote kits (10 Cyanokits) are kept by the clinic, expiry 17 October 2020. The Clinic has a resuscitator available.

Radio's and cell phones are used for emergency communication.

Monthly inspections are conducted on the Emergency Response Equipment in the cabin in the plant, which includes checking that cyanide antidotes are stored as directed by the manufacturer and within their expiry date. The auditors observed records for Rapid Response Team Equipment Monthly Inspection Checklist for 2016, 2017 and 2018.

The operation has developed specific written emergency response plans or procedures to respond to cyanide exposures as follows:



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Acacia Bulyanhulu Gold Mine Emergency and Crisis Management Plan, BUL-OHS-PLA-0001, Rev 00, 27 January 2016; and

CIL Emergency Action procedure to an area known or assumed to have high HCN Level, BUL-PRP-PRO-0171, Rev 00, 09 June 2018.

The site has a clinic fully equipped to handle cyanide emergencies. One doctor and one paramedic are on call as well as two medics. One member from the Mine Emergency Response Team is on call 24 hrs. Three plant employees per shift forms the plant emergency response team.

The operation has a formalised agreements with a hospital in Nairobi for the evacuation of patients so that these providers are aware of the potential to treat patients for cyanide exposure. The operation is confident that the medical facility has adequate, qualified staff, equipment and expertise to respond to cyanide exposures.

Acacia Bulyanhulu Gold Mine Emergency and Crisis Management Plan, BUL-OHS-PLA-0001, Rev 00, 27 January 2016.

Section 19.3 Medical Evacuation (Mede – Vac)

“In the event of a serious accident, illness or injury, medical evacuation may be considered. This will be done under the direction of the site Medical Advisor or the most senior Doctor if he/she is not available.”

An updated letter dated 11 June 2018 was observed from Dr Zahia Moloo, chair of department of pathology, Aga Khan Hospital, Nairobi confirming they have the capability and expertise to handle cyanide poisoning.

Mock emergency drills are conducted periodically to test response procedures for various cyanide exposure scenarios, and lessons learned from the drills are incorporated into response planning.

Mock drills are undertaken on the mine on a quarterly basis with at least one of these being on a cyanide exposure scenario.

All of the drill reports include a description of the findings, learnings and recommendations.

The drill reports are signed off by the New CIL Front Line Leader and the Plant Trainer and Assessor who incorporate any lessons into response planning.



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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.

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 7.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has developed an Emergency Response Plan to address potential accidental releases of cyanide - Emergency Crisis and Management Plan, BUL-OHS-PLA-0001 Revision No: 00, Issued Date 2016 January 27.

The Plan considers the potential cyanide failure scenarios appropriate for its site-specific environmental and operating circumstances, including the following:

- Catastrophic release of hydrogen cyanide from storage or process facilities;
- Transportation accidents;
- Releases during unloading and mixing;
- Releases during fires and explosions;
- Pipe, valve and tank ruptures;
- Overtopping of ponds and impoundments;
- Power outages and pump failures;
- Uncontrolled seepage;
- Failure of cyanide treatment, destruction or recovery systems and
- Failure of tailings impoundments, and other cyanide facilities

Section 20.8.5 Catastrophic Release of HCN. Transportation accidents are the responsibility of the transportation company FFT. Bulyanhulu mine will assist if the incident is close by.

The Plan describes specific response actions (as appropriate for the anticipated emergency situations) such as clearing site personnel and potentially affected communities from the area of exposure, use of cyanide antidotes and first aid measures for cyanide exposure, control of releases at their source, and containment, assessment, mitigation and future prevention of releases.

The Plan describes the following specific response actions:

Section 19.18 Emergency Evacuation of Process Plant.

Section 20.8.21 Cyanide Release Affecting the community and Agricultural areas.



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Section 20.6.6 First Aid Procedure.

Section 20.8.19 Decontamination of a solid or liquid cyanide spill into soil.

All scenarios include control of release at the source, containment, assessment and mitigation.

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 7.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has involved its workforce and stakeholders in the cyanide emergency response planning.

The workforce is involved in the Mock Drills. In addition, the workforce can provide input into the writing and updating of procedures including the Emergency Response Plan (ERP). In addition, the ERP is reviewed on an annual basis.

The community is not involved in the emergency response planning process. They do have an opportunity to provide comments during the stakeholder engagement process described in 9.1.

Communities are made aware of the risks through consultation detailed in 9.1.

In the event of a community being affected the village executive will be contacted by the site community relations officer after being authorised by the General Manager.

No local response agencies are involved in the emergency plan as the Mine Emergency Control Centre and medical clinic are situated inside the Mine security area. The on-site clinic is involved with the full cycle cyanide mock drills and de-briefing sessions following drills. Local response agencies do not have the training or equipment to assist in the event of an emergency. Consultation with external stakeholders is not required as they are not involved in the event of an emergency.

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 7.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The Emergency Response Plan includes cyanide related elements as follows:



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Section 7.13: Responsibilities of duty card holders (major incidents) p 22 to 28

Section 7.14: Operations Officer (duty card 2) p 29 to 37

Section 7.15: Planning Officer (duty card no 3) p 38 to 43

Section 7.16 Logistics Officer (duty card no 4) p 44 to 49

Section 7.17: Emergency Officer (duty card no 5) p 50 to 55

There is 1 emergency response team (ERT) member on duty 24 hours external to the Plant. Within the Plant there are 3 members on each shift who are members of the ERT. Their details are placed on the notice board, as observed by the auditors.

Section 8 in the ERP details the requirements of the ERT and states that a current list of all ERT members is available with the emergency response (ER) coordinator.

There are two members of the ERT external to the Plant. One member of the team is always on duty.

Call out procedures are detailed in Section 7.7.2 Activation Process Flowchart.

Section 27.1 Telephone numbers details the contact information

Section 8 of the ERP states that skills maintenance training will take the form of refresher skills training mixed scenarios and emergency drills involving all personnel. See Training for details.

There are two members of the ERT external to the Plant. One member of the team is always on duty.

Call out procedures are detailed in Section 7.7.2 Activation Process Flowchart.

Section 27.1 Telephone numbers details the contact information

Section 7.13 to 7.20 Duty Card Holders - detail the responsibilities of the relevant card holders.

Section 8.3 Consolidated Inventory - Hazmat and Cyanide Equipment.

Section 8 Emergency Response Team states "A list of all equipment is also available with the ER Coordinator".

Monthly inspections are conducted on the Emergency Response Equipment in the cabin in the plant to ensure its availability. The auditors observed records for Rapid Response Team Equipment Monthly Inspection Checklist for 2016, 2017 and 2018.

There is no role for outside responders, medical facilities or communities in the case of an emergency. The local response agencies do not have the training or equipment to assist with an emergency at the mine. The medical facility is on site due to the distance to the nearest medical facility off site. Communities will be kept at a precautionary distance from any incident to prevent injuries.



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Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting. in full compliance with

The operation is

 in substantial compliance with**Standard of Practice 7.4** not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

The Plan includes procedures and contact information for notifying management, regulatory agencies, and medical facilities of the cyanide emergency. Outside response agencies are not involved in a cyanide emergency.

The Plan include procedures and contact information for notifying potentially affected communities of the cyanide-related incident and any necessary response measures and for communications with the media.

Section 6. Emergency Response Flow Chart - provides the procedure to follow in terms of who to contact in the event of minor or major incident, including Village community leaders (where applicable).

Appendix 27 contains the following important contact information:

- 27.1.1 Emergency Contact Directories (Internal) - Crisis management team leader, Information coordinator, security, emergency services, etc.
- Radio Channel Assignment;
- Important contacts (regulatory agencies);
- Village level contact;
- Police contacts
- Expatriate Embassies and High Commissions.

Section 7.12.7 Internal communication - Internal notification of crisis escalation will be issued by the nominated Crisis Management Team Leader.

Section 7.12.8 External Communication - External communications shall only be carried out by the nominated Spokesperson after authorisation from the Crisis management Team Leader and Legal Advisor.

A media room shall be established to enable the nominated spokesperson to provide information to the media in a controlled environment.


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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 7.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.5 to incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The Plan describes specific remediation measures as appropriate for the likely cyanide release scenarios, including the following.

Section 20.8.19 Decontamination of a Solid or Liquid Cyanide Spill into Soil - describes the steps to follow to recover or neutralise the spilled liquid or solid cyanide.

Section 20.8.19 Decontamination of a Solid or Liquid Cyanide Spill into Soil - for the treatment of contaminated ground, Sodium Hypochlorite is the preferred reagent - describes the use of sodium hypochlorite for decontamination processes (ratio's to be used). Stored in the Spill Kits.

Section 20.9.4.2 Soil Sampling at Depth - contaminated sites will continue to be decontaminated until results of the samples taken from the sites show concentrations of WAD cyanide, free cyanide and cyanide total to be below or equivalent to 0.5mg/l.

Soil sampling will be conducted in accordance with the method described in Sodium Cyanide Mixing Plant (Area 4167) Activity - Cyanide Cleaning Liquid Spill Safe Work Procedure, BUL-PRP-PRO-0264, Rev 00, 12 06 2018.

Section 20.8.19 Decontamination of a Solid or Liquid Cyanide Spill into Soil - describes the disposal of wet spilled (absorbed) as well as dry spilled debris to the process.

Section 20.8.21 Cyanide release affecting the community - Bulyanhulu will supply potable water to any people who may be affected by the incident or who have access to their drinking water restricted as a result of the incident.

The ERP prohibits the use ferrous sulphate, hydrogen peroxide and sodium hypochloride to treat cyanide that has been released into surface water.

The ERP states that the Bulyanhulu Environmental Department will arrange for the incident area to be monitored in conjunction with NEMC and in accordance with directions from Orica.

Monitoring will be conducted as per the Environmental Surface Water Monitoring procedure and the soil sampling will be conducted in accordance with the method described in Sodium Cyanide Mixing Plant (Area 4167) Activity - Cyanide Cleaning Liquid Spill Safe Work Procedure, BUL-PRP-PRO-0264, Rev 00, 12 06 2018.



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Standard of Practice 7.6: Periodically evaluate response procedures and capabilities and revise them as needed. in full compliance with

The operation is

 in substantial compliance with

Standard of Practice 7.6

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

The operation reviews and evaluates the cyanide related elements of its Emergency Response Plan for adequacy on a regular basis.

Section 7.6.2 Updating the Plan - The Plan must be reviewed at least annually for currency, utility and correct adjustment in response to organisational changes. Responsibility for carrying out reviews on each site will be delegated by the Management Team Leader. Although reviewed annually the Plan is only updated if there are changes to be made. The Plan was last updated on 27 January 2016.

Mock Drills are conducted periodically as part of the ERP evaluation process.

Mock drills are undertaken on the mine on a quarterly basis with at least one of these being on a cyanide exposure scenario.

All of the drill reports include a description of the findings, learnings and recommendations. The drill reports are signed off by the New CIL Front Line Leader and the Plant Trainer and Assessor. The ERP is reviewed following the mock drills and where necessary the ERP will be updated. The ERP has not required updating in response to a mock drill over the current ICMC recertification period.

Provisions are in place to evaluate and revise the Emergency Response Plan after any cyanide-related emergency requiring its implementation.

Section 16 Review and Continual Improvement of the ERP - The emergency plan will be reviewed fully:

- At least annually and/or
- At any time major changes occur in operations on the mine site.
- For example, the emergency plan will be revised in line with recommendations from emergencies, emergency drill debriefs and recommendations from Emergency Plan reviews at other operations.



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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.

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 8.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation trains all personnel who may encounter cyanide in cyanide hazard recognition together with an annual refresher.

The auditors observed the Induction presentation given to all employees, contractors, personnel that will work in the Process Plant, and TSF personnel. The slides are in English but the trainer gives it in the local language (Swahili).

Chemical and Cyanide Awareness Presentation used for the induction provides an overview of the following: what is cyanide and that it is found in different materials; the use of cyanide in the plant and areas where it is used; physical nature, packaging and delivery; cyanide storage; cyanide areas in the plant; cyanide toxicity levels; routes of entry into the body; symptoms of cyanide poisoning; PPE to be used when working with cyanide; Cyanide Poisoning Rescue Procedure; First Aid procedure (eye contact, inhalation, skin contact, ingestion); HCN gas monitoring equipment; cyanide spill management; general chemical awareness; chemical handling procedure; Material Safety Data Sheets; safety showers and low pressure eye wash stations; and chemical exposure health effects.

The auditors also observed the following:

Cyanide Training Register 2018 (excel spreadsheet - Chemical & Cyanide Training Records & Status

The records include the name of the person, Company number, ID No., Shift, Job Description, Course Date, Status (current). Records are included for Operations, Maintenance, SGS, Security G4S, TSF.

The signed attendance registers for 2016, 2017 and 2018. Training is conducted annually and refreshed every year. All participants must pass a test at the end of the training.

It was observed that records are kept electronically as well as hard copies in the employee files. Attendance registers are kept in hard copy.

Training records are kept for as long as the person is employed and then for 5 years thereafter.



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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.

in full compliance with

The operation is in substantial compliance with **Standard of Practice 8.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.2 to train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

The operation trains workers to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases.

The auditors observed the following:

Training Attendance Form for training conducted on the Mixing Sodium Cyanide (Area 4167 New CIL) Safe Work Procedure, BUL-PRP-PRO-0243, conducted on 20 November 2017, attended by 5 employees.

Training Attendance Form for training conducted on the New CIL Mixing Sodium Metabisulphate (Area 5171) Safe Work Procedure, BUL-PRP-PRO-0235, conducted on 20 November 2017, attended by 5 employees.

On-the-Job training records were observed.

It was observed that the training elements necessary for each job involving cyanide management are identified in training materials.

Appropriately qualified personnel provide task training related to cyanide management activities.

Deogratias Bisese Primus is the Training First Line Leader and is appropriately educated.

All employees receive induction training before being allowed to start with their training in the sections under supervision. The worker is only allowed to work unsupervised with cyanide once assessed and signed off for each task by his supervisor. Annual induction training is provided to the employees to ensure they continue working safely with cyanide.

The effectiveness of the training is evaluated by testing after the induction training. In addition, Planned Task Observations (PTOs) are conducted after the appropriate training has been received on the procedures.

Records are retained for the duration of the employees employment as well as 5 years thereafter. The records document the training that was received, including the names of the employee and trainer, the date of training, the topics covered and how the employee demonstrated his/her understanding.



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Standard of Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide. in full compliance with

The operation is

 in substantial compliance with

Standard of Practice 8.3

 not in compliance with**Summarise the basis for this Finding/Deficiencies Identified:**

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

All employees receive the Chemical and Cyanide Awareness Training (including training on cyanide releases) and First Aid Training during the Plant Safety Induction.

The Chemical and Cyanide Awareness Training includes training on the steps to take for decontamination and first aid during a cyanide incident.

All plant employees, including the plant ERT members, the Site ERT team, Clinic Drs and Paramedics all receive the Chemical and Cyanide Awareness Training which include First Aid response and the use of the necessary response equipment.

Emergency Response Training Calendar for 2018 was observed. Training for the ERT personnel was observed.

The community does not form part of the Emergency Response Plan.

The medical providers on site undergo cyanide awareness training as part of the induction and annual refresher. They are also involved in the mock-drills and emergency planning.

The mock drill undertaken on the 31 May 2018 was a full chain drill such that the casualty was transported to hospital in the on-site ambulance.

All employees receive the Chemical and Cyanide Awareness Training (including training on cyanide releases) and First Aid Training during the Plant Safety Induction. A refresher training is undertaken on an annual basis. Mock drills are undertaken on the mine on a quarterly basis with at least one of these being on a cyanide exposure scenario.

Simulated cyanide emergency drills are periodically conducted for training purposes. They cover both worker exposures and environmental releases.

Cyanide emergency drills are evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response. Training procedures are revised if deficiencies are identified.

It was observed that the Drill Report is compiled by the New CIL Front Line Leader, and Process Trainer & Assessor.

The drill report includes:

- Incident Description;
- Sequence of events;
- Findings;



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- Learnings; and
- Recommendations.

If deficiencies are found the Process Trainer & Assessor revises the training procedures.

Records are retained 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.



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Principle 9 – Dialogue

ENGAGE IN PUBLIC CONSULTATION AND DISCLOSURE

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

in full compliance with

The operation is

in substantial compliance with

Standard of Practice 9.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation provides the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide.

Community Meetings are held to provide the community with a chance the communicate with the mine. Sometimes the community visits the mine and sometimes the mine employees visit the community. 14 Villages are located around the mine site.

The Mine attends the monthly village meetings. Meetings are also scheduled if there are any pressing issues.

There was a visit by the Community Facilitators in June 2018 - volunteers that facilitate communication between the community that they live in and the mine. The meeting was held to train them on Chemical and Cyanide Awareness in order for them to take the message back to the community.

Monthly meetings are held with Community Facilitators to discuss any issues or communication requirements.

Community Engagement & Consultations Meeting Minutes - Mine Tour for Community Leaders – 13 April 2018.

Items discussed:

- Introduction General Manager to Community Leaders;
- Company Operation Status (Reduced Operations);
- Department Presentation (understanding of mine operations);
- Community Project / Plan 2018;
- Mine surface and underground tour.

This was attended by 35 people.

Community Engagement & Consultations Meeting Minutes - Mine Tour for Community Leaders - 12 Sept 2018

Mine has a formal Grievance Mechanism Procedure, which allows people to register a grievance:



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- via Community Facilitators;
- at the Village Office outside the village that is manned by the Village Leaders;
- at the mine.

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

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

Summarise the basis for this Finding/Deficiencies Identified:

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

There are opportunities for the operation to interact with stakeholders and to provide them with information regarding cyanide management practices and procedures.

Community Meetings are held to provide the community with a chance to communicate with the mine. Sometimes the community visits the mine and sometimes the mine employees visit the community.

14 Villages are located around the mine site.

The Mine attends the monthly village meetings. Meetings are also scheduled if there are any pressing issues.

The auditors observed photographs of a visit by the Community Facilitators in June 2018- volunteers that facilitate communication between the community that they live in and the mine. The meeting was held to train them on Chemical and Cyanide Awareness in order for them to take the message back to the community.

Monthly meetings are held with Community Facilitators to discuss any issues or communication requirements.

The auditors observed the following: Attendance Register for Cyanide Awareness Training - Community Facilitators. attended by 31 members.

Observed: Community Engagement & Consultations Meeting Minutes - Mine Tour for Community Leaders – 13 April 2018.

Items discussed:

- Introduction General Manager to Community Leaders;
- Company Operation Status (Reduced Operations);
- Department Presentation (understanding of mine operations);
- Community Project / Plan 2018;
- Mine surface and underground tour.



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This was attended by 35 people.

Community Engagement & Consultations Meeting Minutes - Mine Tour for Community Leaders - 12 Sept 2018.

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

in full compliance with

The operation is in substantial compliance with **Standard of Practice 9.3**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

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

The auditors observed a pamphlet in Swahili containing information on Cyanide Identification and Management.

The pamphlet is distributed to the community to read in their own time and discuss with their families.

The auditors observed a Chemical and Cyanide Awareness presentation, in Swahili, that is presented to the community facilitators and it was placed on the community notice board.

The operation has disseminated information on cyanide in verbal form where a significant percentage of the local population is illiterate.

The information on the pamphlets and in the presentation is verbally communicated to the illiterate members of the community.

The operation makes information publicly available on confirmed cyanide releases or exposure incidents.

The Emergency Crisis Management Plan states that the General Manager will provide permission to communicate any information regarding releases or exposure to external parties.

The plan contains the contact details of the Local communities (Village Chairman), Government Departments and Emergency Services.



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