THE EAGLE

Lubambe Copper Mine

A publication of Lubambe Copper Mine Issue 02 January - March 2019

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CEO's MESSAGE

Welcome to the second edition of the Eagle. The first quarter of the 2019 year has ended and a lot has happened.

On the safety front, we had an excellent Lost Time accident free quarter. We have now worked since 25th November 2018 to the end of March 2019 without a Lost Time Injury (LTI), accruing 2,6 million LTI Free hours. Major safety improvements include: the development of a Safety Management System aligned to ISO 45001, development of SHE standards for High Risk Work, revision of Safe Work Procedures and development of new contractor management procedures. Well done to everyone at Lubambe, both employees and contractors who have contributed to our safe performance.

Congratulations to all our female employees for celebrating International Women's Day on March 8. Although our female employees account for only 8 percent of our workforce, their contribution at the mine is significant across all levels from operator through to management.

With production, tonnes hoisted at 417,833 were up 1.5% on the previous quarter. Both tonnes hoisted and meters developed were impacted by a combination of poor equipment availability and water issues. However, compared to Q1,2018 our production for this quarter is up 41% which shows how much we have improved in the last 12 months. Importantly we are making progress to address both these issues. We have new equipment on order [loaders, trucks and charge up units] that will all be delivered in the period between May and July this year. In addition, work is progressing on our pumping system. We are upgrading the main pump station at 122 level, installing a new shaft pump station at the 175 level and constructing a new high capacity pump station at the 420 level. These works will be progressively completed over the next 12 months and will result in a significant increase in our pumping capacity.

Copper produced at 6182 tonnes was down 7.8% from the previous quarter primarily due to lower grades. However, compared to 12 months ago copper production was up 13%.

During the quarter we also commenced the transition to full contractor development. Redpath Rig Resources mobilized and started work in Ramp 3 and will start in Ramp 4 in April. The Lubambe workers previously involved in development will be progressively transferred to new roles in stoping, road works and rehabilitation.

Overall our progress remains in the right direction as we work towards our Vision of being the Best Mine in Zambia
Keep up the good work and Be Safe.

Enjoy your reading.

Nick Bowen
CEO

TALKING SAFETY, FOCUS ON ELECTRICITY

With Daniel Chihili

A hazard is defined as anything that has potential to cause harm. Even things that are intended to give us comfort or necessity could cause harm and death if mishandled, misapplied or abused. Let's talk about the dangers of electricity.

Electricity is a necessity and very essential to make our livelihoods and work easy. The design of our operations at Lubambe Copper Mine are hinged on electricity, without it there would be no production. In our homes, tempers flare and discomfort arises whenever we do not have the privilege of having electricity.

But the same electricity can work against us if not properly handled. The generation, transmission and use are engineered in such a manner to protect the users and at the right voltage and amperage.

What happens when a person comes into contact with electricity?

1. Electric shock

An electric shock occurs when a person comes into contact with an electrical energy source. Electrical energy flows through a portion of the body causing a shock. Exposure to electrical energy may result in no injury at all or may result in devastating damage or death.

Effects on the body – electric shock.

An electrical shock is usually painful and can be lethal. The level of voltage is not a direct guide to the level of injury or danger of death, despite the common misconception that it is. A small shock from static electricity may contain thousands of volts but has very little current behind it due to high internal resistance. Physiological effects and damage are generally determined by current and duration. Even a low voltage causing a current of extended duration can be fatal. It should be noted, however, that Ohm's law directly correlates voltage and current for a given resistance; thus, for a particular path through the body under a particular set of conditions, a higher voltage will produce a higher current flow.

'Let – go' current

With sufficiently high current, there can be a muscular spasm which causes the affected person to grip and be unable to release from the current source. The maximum current that can cause the flexors of the arm to contract but that allows a person to release his hand from the current's source is termed the let–go current. For DC, the let – go current is about 75 mA for a 70kg man. For alternating current, the let–go current is about 15 mA, dependent on muscle mass.

Shock effects

Burns.

Tissue heating due to resistance can cause extensive and deep burns. High-voltage (>500 to 1000 V) shocks tend to cause internal burns due to the large energy (which is proportional to the square of the voltage) available from the source. Damage due to current is through tissue heating.

Ventricular fibrillation.

A low-voltage (110 to 220 V), 60-Hz AC current traveling through the chest for a fraction of a second may induce ventricular fibrillation at currents as low as 60mA. With DC, 300 to 500 mA is required. If the current has a direct pathway to the heart (e.g. via a cardiac catheter or other electrodes), a much lower current of less than 1 mA, (AC or DC) can cause fibrillation. Fibrillations are usually lethal because the heart muscle

cells move independently. Above 200mA, muscle contractions are so strong that the heart muscles cannot move at all.

Neurological effects.
Current can cause interference with nervous control, especially over the heart and lungs.

Avoiding danger of shock.
Current electrical codes in many parts of the world call for installing a residual-current device (RCD or GFCI, ground fault interrupter) on electrical circuits thought to pose a particular hazard to reduce the risk of electrocution.

Only fully trained and authorized electricians and Engineers are allowed to work on any electrical apparatus or equipment. In exceptional circumstances such as commissioning where there could be a likelihood to work on live conductors, authorization has to be granted by the General Manager Operations as per the Lubambe Safe Work Procedures.

Also, remember there can be a voltage potential between "neutral" wires and ground. The neutral wire from a high-wattage appliance will have nearly as much voltage potential to ground as its hot wire. However, even a low-wattage appliance isn't safe against electrocution from its neutral wire.

If both hands make contact with surfaces or objects at different voltages, current can flow through the body from one hand to other. This can lead the current to pass through the heart. Similarly, if the current passes from one hand (especially the left hand) to the feet, significant current will probably pass through the heart.

What to do if someone has suffered electrical shock.
Take these actions immediately while waiting for medical help:

- Turn off the source of electricity, if possible. If need be, you can use a non-conducting article to let the person free from the electrical source.
- Begin CPR if the person shows no signs of circulation, such as breathing, coughing or movement.
- Try to prevent the injured person from becoming chilled, cover with a blanket.
- Soak burn for 30 minutes under running water and apply a burn-shield to burnt area when the burns are not life threatening.

2. Electrical Burns.

Electrical burns occur when current jumps from an electrical outlet, cord or appliance and passes through your body. The electricity can burn the skin, sometimes very deeply, and may also cause internal damage. How quickly you heal depends on the severity of the burns and injuries.

There are innumerable ways for anyone – particularly a child – to get an electrical burn. Among the leading causes are sticking a knife into a plugged-in toaster, dropping a plugged-in appliance into water, sucking or chewing an electrical cord, and sticking something into an electrical socket.

Signs/symptoms
There are three degrees of severity, each with distinctive symptoms:

- First degree burns are mild and only injure the outer layer of skin. The skin becomes red but turns white when touched. The area may also be painful to the touch.
- Second degree burns are deeper, more severe, and very painful. Blisters may form on the burned area. This type of burn takes about two weeks to heal.
- Third degree burns are the deepest and most serious kind. The skin becomes white and leathery, but it does not feel very tender when touched.

There may be swelling in the burned area. Serious burns may be accompanied by headache, fever and dizziness.

Direct and indirect causes of burns
Direct -When an electrical current passes through the human body, it heats the tissue along the length of the current flow. This can result in deep burns that often require major surgery and are permanently disabling. Burns are more common with higher voltages but may occur from domestic electricity supplies if the current flows for more than a few fractions of a second.

Indirect-Overloaded, faulty, incorrectly maintained or shorted electrical equipment can get very hot, and some electrical equipment gets hot in normal operation. Even low voltage batteries (such as those in motor vehicles) can get hot and may explode if they are shorted out.

People can receive thermal burns if they get too near hot surfaces or if they are near an electrical explosion. Other injuries may result if the person pulls quickly away from hot surfaces whilst working at height or if they then accidentally touch nearby machinery.
A single low voltage torch battery

can generate a spark powerful enough to cause a fire or explosion in an explosive atmosphere such as in a paint spray booth, near fuel tanks, in sumps, or many places where aerosols, vapours, mists, gases, or dusts exist.

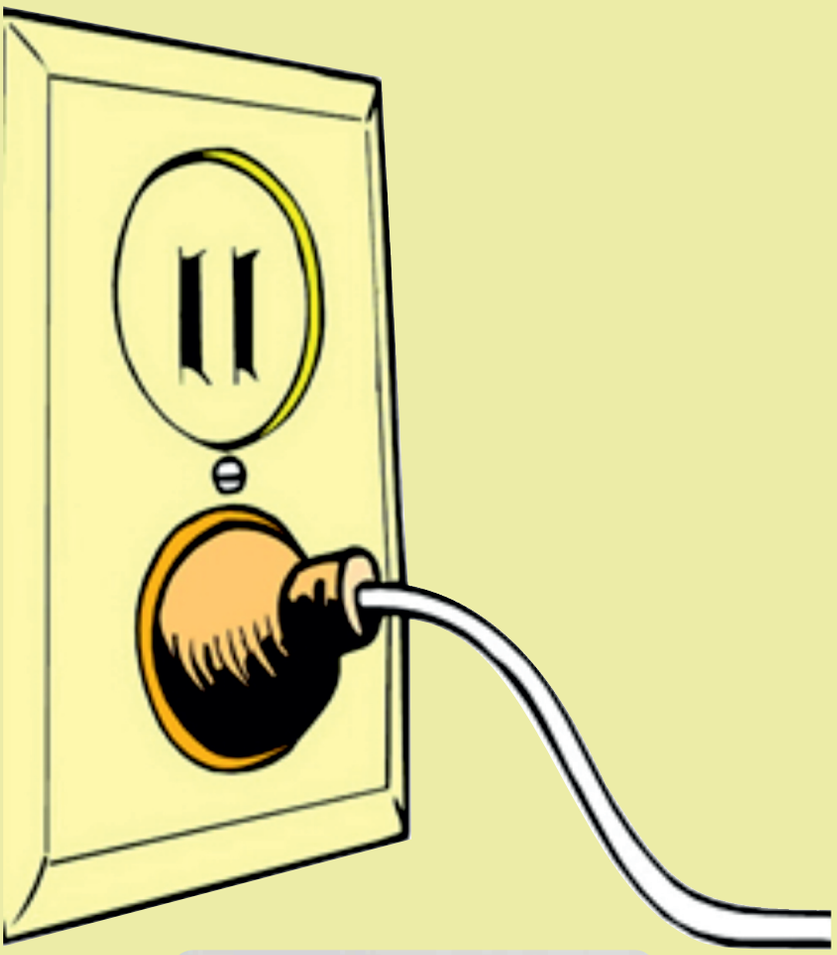
First aid treatment: principles for electrical injuries

WHAT YOU SHOULD DO:

- Soak the burned skin in cold water for as long as possible but at least 30 minutes
- Seek urgent medical attention
- Remember that electrical shocks can cause damage to the heart and other organs- in all cases of electric shock medical attention must be immediately sought

When changing bandages:

- Wash your hands well with soap and water. Dry them with a clean towel.
- Remove the outer bandage by cutting it off with a pair of scissors. Do not pull of the bandage if it is sticking to the burn. Instead, soak it in warm water for a few minutes then remove it slowly.
- Gently wash the burn with warm, soapy water. Use a clean, soft cloth to help remove any old cream, blood and loose skin. Do not break blisters. This may increase the pain.
- Rinse the burn with clear warm water. Pat dry with a towel.
- With a clean tongue depressor, apply a thin layer of the antibiotic cream prescribed by your doctor to a gauze pad. Throw the tongue depressor away when you have finished. Do NOT put it back in the container of antibiotic cream.
- Cover the burn with the gauze. Be careful not to touch the gauze that comes into contact with the burn. Carefully rewrap the burn with a clean bandage as directed by your doctor.



- Keep the bandage clean and dry. Change it if it gets wet.
- If the burn is on your arm or leg, keep it raised or propped up for the first 24 hours to help reduce swelling.
- You may use paracetamol or ibuprofen for pain.
- Try to drink plenty of water or juice.
- Do not bump or overuse the burned area.
- At Lubambe Copper Mine, only trained and authorized employees are allowed to deal, isolate, fix and install any electrical appliances, equipment and installations.

Do not take chances to attempt to do what you are not authorized to do, the consequences could be fatal!

LUBAMBE COMMISSIONS SECOND CONCENTRATE COLUMN

Lubambe Copper Mine has installed a second flotation Column at the Sulphide Cleaning Circuit stage to save on costs which the mine was incurring as a result of low concentrate quality.

The mine has been paying penalties to smelters as high as US$2 million per annum for selling concentrates with higher than desired levels of Silica, Aluminum Oxide and Magnesium Oxide.

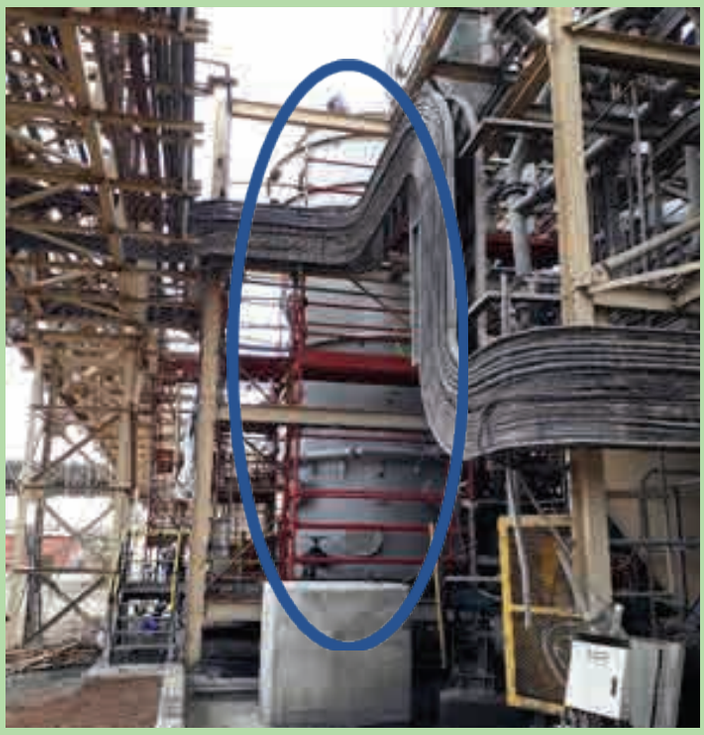
Metallurgy Manager Venus Kasito said the installation of the new column will reduce levels of Silica from 21 percent to 12.4 percent, Aluminum Oxide from 6.5 percent to 4.2 and Magnesium Oxide from 2.1 percent to 0.4 percent and consequently avoid the smelter penalties that the mine has been paying.

“With the new concentrate targets,Lubambe Copper Mine is expected to save on smelter penalties, treatment charges and transportation costs, as 20% gangue shall be removed from the concentrates,” he said.

He added that the new column will also increase the concentrate grade to above 50 percent as evidenced during the pilot project by Prep Quip, the contractor engaged to construct the first column.

Mr. Kasito further explained that in a bid to ensure that the installation of the second column was smooth, DRA, an engineering group, was contracted by Lubambe to oversee the works by Prep Quip.

Actual installations of the second column began on November 9, 2018 and was commissioned on December 23, 2018.



New Column

Old Column

LUBAMBE PUTS IN PLACE DEWATERING IMPROVEMENT PLAN

Pipes pumping water from Underground and Surface.

By Dyson Galatia

Dewatering and groundwater control is an important part of an underground mine. When mining below the water table, groundwater is an inevitable challenge. On some projects, groundwater could be a minor impediment that can be dealt with on an ad-hoc basis. However, on other projects, and in other geological settings, planning and execution of dewatering could be fundamental to the viability of the mine and may require very large resources and management intervention.

Lubambe Copper Mine is an underground mine which generates large volumes of water from underground aquifers and this water is pumped to surface through a series of pump stations.

History

During the feasibility study of the mine, it was concluded that the estimated inflows of water into the mine would start at 325mbgl (metres below ground level) This was based on the assumption that the two limbs (East and South) were connected hydraulically and due to the fact that the Lubambe 2 shaft was dry to a depth of 401mbgl. However, in September 2014, Ramp 5 first encountered ground water inflows from the Kafufya at a depth of 250mbgl which was 75 metres higher in the mine than expected.

The ground water influx into the mine was estimated at around 5,000 cubic metres per day based on the difference in water balance between flow meter volumes of water sent down the mine and water pumped out of the mine. Although this was a small amount when compared to the volumes handled by other mines in Zambia such as Konkola Copper Mine, Lubambe was battling to maintain the rate required to deal with the influx of water. This was mainly because the mine did not anticipate such volumes of water at this stage of mining and was not adequately prepared in terms of pumping infrastructure.

The major challenge then was how to deal with an influx of ground water that had progressively

slowed the rate at which ramp development could take place. Ramp advance fell below the rate needed for the projected ore reserve build up to sustain the 200,000 ore tonne design capacity of the mine. In the last quarter of 2014, the ramp sinking rate had also fallen to a level where the mine could barely develop at a rate enough to sustain monthly production of 80,000 tonnes .

Lubambe Copper Mine lies updip to the north from the Konkola Copper Mine No 3 shaft, and down-dip to the south from the Musoshi Mine in the DRC. Due to the location of the Lubambe mine between the two, it was certain that there was need for a concerted dewatering program ahead of ramp development if the required mine sinking rate was to be sustained. Whilst the stratigraphy was reasonably similar among the three areas mentioned, there was no detailed knowledge of the hydrogeological regime of the potential inflow conditions or potential water volumes into the mine.

Current Pumping Configuration

The pumping of water from underground to surface is through a cascade pumping system where a number of pumping stations have been deployed and consists of:

Fixed Pump Chambers: These encompass all dewatering pump chambers that have permanent infrastructure and may not be moved. These pump chambers are constructed along the decline and pump from one pump chamber to another. To enhance reliability, each pump station has a minimum of one standby pump to cater for servicing and unplanned breakdowns.

Mini (movable) Pump Stations: These are pumps built on skids and may be moved from one place to the other and usually receive water from submersible pumps located in working areas.

Portable Pumps: These are of a submersible nature, portable and installed in mining/production areas to ensure that water in mining work areas is kept to a minimum.

Challenges with the Current System

The challenges associated with the current system could be summarised as below:

Damage to the roadways: most of the dewatering pipelines pass along the decline (drive way) and whenever there is a pipe failure, the water tends to run along the decline thereby washing away the roadways. This condition is counterproductive as it slows down the

The arrow indicates where the pipe pumping water from underground will be placed.

movement of production vehicles and causes excessive wear on the equipment.

Inadequate capacity: Both holding and pumping capacity is not at an adequate level yet. The system cannot hold water for a period beyond 30 minutes without pumping. Each time there is a stoppage in pumping for 30 minutes or more, the whole pumping network starts to overflow since the system has limited storage capacity.

Water Management Plan
When EMR Capital assumed ownership of the mine in December 2017, underground dewatering was given the highest priority and immediately an action plan was put in place to mitigate the challenges of underground water.

Improvement Action Plan.
The action plan set out to mitigate the underground dewatering was in two phases. The short term, to cater for the current situation and the long term, to take care of the future water inflows.

Construction of High Capacity Dams in Ramp 3, 4, and 5: Currently Ramp 3, 4 and 5 have a common dam at 225ml in Ramp 4 which delivers water to 122ml for the final pumping to surface. This set-up puts a lot of pressure on Ramp 4. If there is a breakdown at 225ml in Ramp 4, the other two levels continue delivering water to Ramp 4, this then overflows and subsequently washes away the roadways. To mitigate this problem, a project has been initiated to construct three high capacity dams in Ramp 3 at 398ml (128m^3 capacity), 327ml^3(184m^3 capacity) and 234ml (730m^3 capacity). This project once completed will relieve the 225ml main dam and the project is expected to be completed by the second quarter of 2019.
122ml Main Pump Chamber Upgrade: this project involves replacing the C5 Warman pumps with the higher capacity DWU200 dirty water pumps.

Installation of a second 14" diameter steel pipe column from 122ml Pump station to surface: currently there is only one discharge line from 122ml pump chamber to surface The installation of a second column will provide a couple of benefits, namely, increased pumping capacity and providing a back-up in an event of failure in one column or major maintenance. Work on the installation of the second column is in progress.

Construction of New Dam at 175ml Ramp2: the construction of this dam is underway, and the dam will be equipped with two DWU 150 dirty water pumps which will pump water directly to surface through a 10" column installed in the shaft.

The commissioning of the three projects will increase the pumping capacity to 40,000m^3 of water per day from the current 20,000m^3 per day.
Long Term Plan

The long-term plan involves the construction of a new pump station in Ramp 4 at 420ml. This pump chamber will pump water straight to surface and will free up several cascade dams which will in turn reduce power and maintenance cost. 420ml in Ramp 4.

This pump station will draw water from the horizontal dams equipped with settling facilities for trapping slurry. Three self-balancing GSB200 Pumps with 1.6MW-11kv motors will be installed under the first phase with a pumping capacity of 900m^3 of water per hour.

The set-up will be such that two pumps will always be in operation and one on standby. Another set of pumps will be installed in the second phase.

Mining below groundwater level presents many challenges and can result in increased mining costs and reduced efficiency through such occurrences as flooding. However, if there is a good program of hydrogeological characterisation and if the dewatering and depressurisation methods are carefully selected, safe and efficient working conditions can help the mine develop to great depth below the water table. Therefore, this initiative initiated by Lubambe Copper Mine, will improve the underground working conditions, hauling efficiency and reduce downtime due to flooding of mining areas.

1st QUARTER 2019 (JANUARY – MARCH) PERFORMANCE

Total metres developed for the first quarter of 2019 were 11.8% down on the previous quarter. This can be mainly attributed to low equipment availability, delayed start-up of the additional mining contractor, delayed delivery of new equipment and poor handling of water inflow. Ore tonnes mined for the first quarter showed a marginal improvement of 1.5%. Copper produced was down 7.8% from the previous quarter primarily due to lower grade and recovery.

Operational Summary						
		Q1 2019	Q4 2018	Change %	Q1 2018	Change %
Safety	**LTIFR**	**0.00**	**0.11**	**(100%)**	**0.44**	**(100%)**
	TIFR	**0.37**	**0.80**	**(54%)**	**1.17**	**(68%)**
Tonnes milled	**Tonnes**	**401,669**	**408,972**	**(2%)**	**297,938**	**35%**
Mill head grade	%	1.86	1.94	(4%)	2.14	(13%)
Concentrator recovery	%	82.99	84.64	(2%)	85.40	(3%)
Copper produced (contained)	Tonnes	6,182	6,708	(8%)	5,450	13%
Ore metres developed	Metres	2,061	2,265	(9%)	2,292	(10%)
Waste Metres Developed	Metres	1,086	1,301	(17%)	1,113	(2%)
Total Metres Developed	**Metres**	**3,147**	**3,566**	(12%)	**3,405**	(8%)
Total ore tonnes mined	**Tonnes**	**417,833**	**411,697**	1%	**296,508**	41%

LUBAMBE ENGAGES DEVELOPMENT CONTRACTORS

Redpath employees at the mobile equipment workshop.

Lubambe has awarded two mining development contracts to Redpath RIG Resources and JCHX. The two contracts scheduled to commence on 1st April 2019 will run for 5 year and encompass all underground development works in the South and East Limbs.

JCHX have been awarded development works in the South Limb (Ramps 1 and 2), while Redpath RIG Resources have been awarded the development works in the East Limb (Ramps 3,4 and 5).

Mine Manager Alfred Ng'ambi who confirmed the award of the two contracts said the engagement of the two contractors was meant to speed up development works and consequently increase production. "Redpath will be mining declines and have access to ore bodies and ore body drives, all the activities to be undertaken by the contractor is what will be required for extra ore to be availed for production to Lubambe", Ng'ambi said. Lubambe plans to increase production to 200,000+ tonnes per month by 2020 and therefore requires additional resources in both development and production. If Lubambe was to directly undertake the development works, significant capital investment of approximately $ US 20 would be required to replace the mobile equipment fleet which had reached the end of its economic life.

In a memorandum to staff in February, General Manager for Operations Tony Davis informed staff that after a detailed analysis, a decision was made that the most cost-effective method of completing development was using contractors. "These are exciting times for Lubambe, and I would encourage all employees both Lubambe and Contractors to embrace this change and do their part to make Lubambe the best mine in Zambia", said Davis.

Davis assured workers that there would be no redundancies following the engagement of the two development contractors. Lubambe personnel currently employed in affected areas would be retrained and redeployed to production areas. Davis added that production rates would double over the course of 2019 and beyond.

Mine Manager Alfred Ng'ambi

LUBAMBE JOINS MALARIA FIGHT

(Left) Lubambe Acting General Manager Operations Venus Kasito shaking hands with Chingola District Health Director Davies Mwewa (Right) after the handover of the spray pumps in Chingola

Lubambe Copper Mine has joined hands with Chililabombwe and Chingola District Health Offices to eliminate Malaria by 2021 as mandated by government.

On January 2, 2019, Lubambe donated forty 15 litres Hudson X – Pert Hand-Held Compression Spray Pumps worth K514, 000 to Chililabombwe and Chingola Health Offices to supplement government's efforts in the fight against Malaria.

Speaking during the handover of 20 spray pumps in Chingola District, Health Director Dr. Davis Mwewa said the 20 spray pumps had come at the right time because the health office had run out of spray pumps to continue the spraying exercise.

"For the drug to be effective, coverage has to be 85 percent and above and the donation by Lubambe will help us reach that target," he said.

He added that Chingola had recorded a slight reduction in the incidence rate of Malaria from 380, 000 in 2015 to 290, 000 in 2018 due to interventions such as the Indoor Spraying and use of Insecticide Treated Mosquito Nets (ITNs).

In Chililabombwe, District Health Director Dr. Martha Chakulimba after receiving the spray pumps said that the district health office had greatly benefited from various initiatives by Lubambe aimed at uplifting the lives of those living around the mine.

She said her office was particularly grateful that the mine was keen on being part of the fight against Malaria by ensuring that the Indoor Residual Spraying (IRS) Exercise, being one of the high impact activities, was successfully implemented.

Dr. Chakulimba also added that Lubambe Mine was a key stakeholder, especially that it was located near Chimfushi, which is one of the four hot spots of Malaria in Chililabombwe, besides Kasumbalesa, Kawama and the peri-urban areas of Konkola.

And Lubambe Acting General Manager for Operations Mr. Venus Kasito who handed the spray pumps to the two doctors said the donation was meant to supplement government's efforts in reducing cases of Malaria in the two Districts.

He assured the recipients that Lubambe would continue to help government and appealed to members of the community to support the fight against Malaria by welcoming the spray operators in the Districts.

The Indoor Residual Spraying exercise is a proven and highly effective Malaria control measure which involves the spraying of residual insecticide on the interior walls of homes to kill mosquitoes, thereby halting Malaria transmission.

The exercise begun on November 26, 2018 and ended on 29 March, 2019.

From Left to right: Lubambe CSR Superintendent Rhoda Daka, Lubambe Acting General Manager Operations Venus Kasito, Chililabombwe District Administrative Officer Mercy Kangwa, Chililabombwe DHD Dr .Martha Chakulimba and Chililabombwe Senior Environmental Officer Kalaluka Kalaluka.

Waste is anything that has lost value or is not needed for use by the owner. Waste can be classified into two broad classifications, hazardous waste and Non-hazardous. This edition focuses hazardous waste.

Hazardous waste as defined by the Environmental Management Act of 2011, means waste which is poisonous, corrosive, irritant, explosive, inflammable, toxic or waste substance that is harmful to human beings, animals, plants or the environment.

Hazardous waste is generated in our daily activities; both at work and at home and the following are the waste types that are commonly generated:

- **Clinical Waste;** Any waste consisting wholly or partly of blood or other body fluids, excretions, medicines or other pharmaceutical products, swabs or bandages, syringes, needles or other sharp instruments. This type of waste may transmit different types of diseases to people exposed to the waste.
- **Redundant Chemicals;** These are chemicals which are no longer needed or used by the owners. These chemicals could be as a result of expiring or replacement by the owner. This type of waste such as pesticides, cleaning chemicals, process chemicals and other chemicals may be toxic to humans, animals and the environment.
- **Chemical Containers;** These are empty chemical packaging materials that are generated after use of the original chemical content. The packaging could be of different type and sizes depending on the amounts/types of chemicals previously contained as shown in figure 1. This type of waste may be toxic to humans, animals and the environment
- **Waste Material Containing Heavy Metals;** Heavy metals are naturally occurring elements such as lead, nickel, cadmium, arsenic, mercury, Zinc and Copper. These metals are used as components in the various common waste types generated at Lubambe such as batteries, fluorescent tubes and waste of mineral processing/minining activities.
- **Explosive Waste Material;** Waste types such as aerosol cans or other sealed containers that were used for volatile materials can explode when heated and cause injury.
- **Used Oil;** is oil that has been used previously, and as a result of that, is now contaminated by impurities, either chemical or physical. Examples of used oil are old transmission oil, motor oil, brake fluid, hydraulic oil and gearbox oil. this type of waste may pollute the environment if not properly disposed.
- **Electronic Waste;** Describes discarded electrical or electronic devices such as computers, phones, tonners, printers. When electronics end up in dumpsites, toxic heavy metals of the waste such as lead, mercury, and cadmium escape into the soil and water which may result in environmental pollution.

Chemicals Hazard Symbols	Hazard Description
	Severe acute toxicity (small dosage can kill within short time)
	Corrosive to skin and serious eye damage (can cause permanent damage to the skin and can damage the eyes)
	Health hazard, effect is usually chronical and repeated exposure result in more serious effect.
	Chemicals with potential to explode and self-reactive chemicals
	Flammables
	Gasses under pressure
	Environmental impacting chemicals

How do I reduce the risks associated with hazardous waste management?

- Pay attention to color code of waste bin or waste liner and signage at waste collection points
- If am not in charge of waste management, my role ends at placing my waste in an appropriate waste receptacle
- Educate others on the risks associated mismanagement of hazardous waste.
- Pay attention to material hazard labels; chemical hazard labels on the chemical container describes hazard characteristics of the chemical which also, apply to wastes associated with the chemical.
- Use expert information as guide when disposing of hazardous waste; material labels and Material Safety Data Sheets describe preferred disposal options.

Plant hazardous waste colour code		
Medical Waste		Yellow
Other types of hazardous waste		Red

LUBAMBE JOINS FIGHT AGAINST ELEPHANTIASIS

A community health worker giving Lymphatic Filariasis drugs to Evelyn Chongo, a Lubambe employee

Lubambe Copper Mine in collaboration with the Chililabombwe District Health Office has embarked on a Mass Drug Administration program to combat Lymphatic Filariasis (LF)-related diseases such as Lymphoedema, Hydrocoele and Elephantiasis. In Chililabombwe, the Mass Drug Administration started on January 5 to 8, 2019. Lumbambe employees could however not participate in the first round of the Drug Administration program because of their tight work schedules. The employees, were however, given an opportunity to receive the drugs at the Mine in the second round of the program from 5 to 8 February. 2019.

Evelyn Chongo, an employee of Lubambe who participated in the program expressed happiness that the District Health Team had offered a unique opportunity to Lubambe employees to receive the drugs from the Mine.

Meanwhile, Lubambe's Safety and Health Manager Daniel Chihili encouraged Lubambe employees to take part in the Drug Administration program as it was meant to halt transmission of lymphatic filariasis, manage its morbidity and prevent disability. And Kakoso First Level Hospital Medical Doctor In charge Tshiboko Kapumbu said Chililabombwe District had successfully implemented the MDA for three consecutive years.

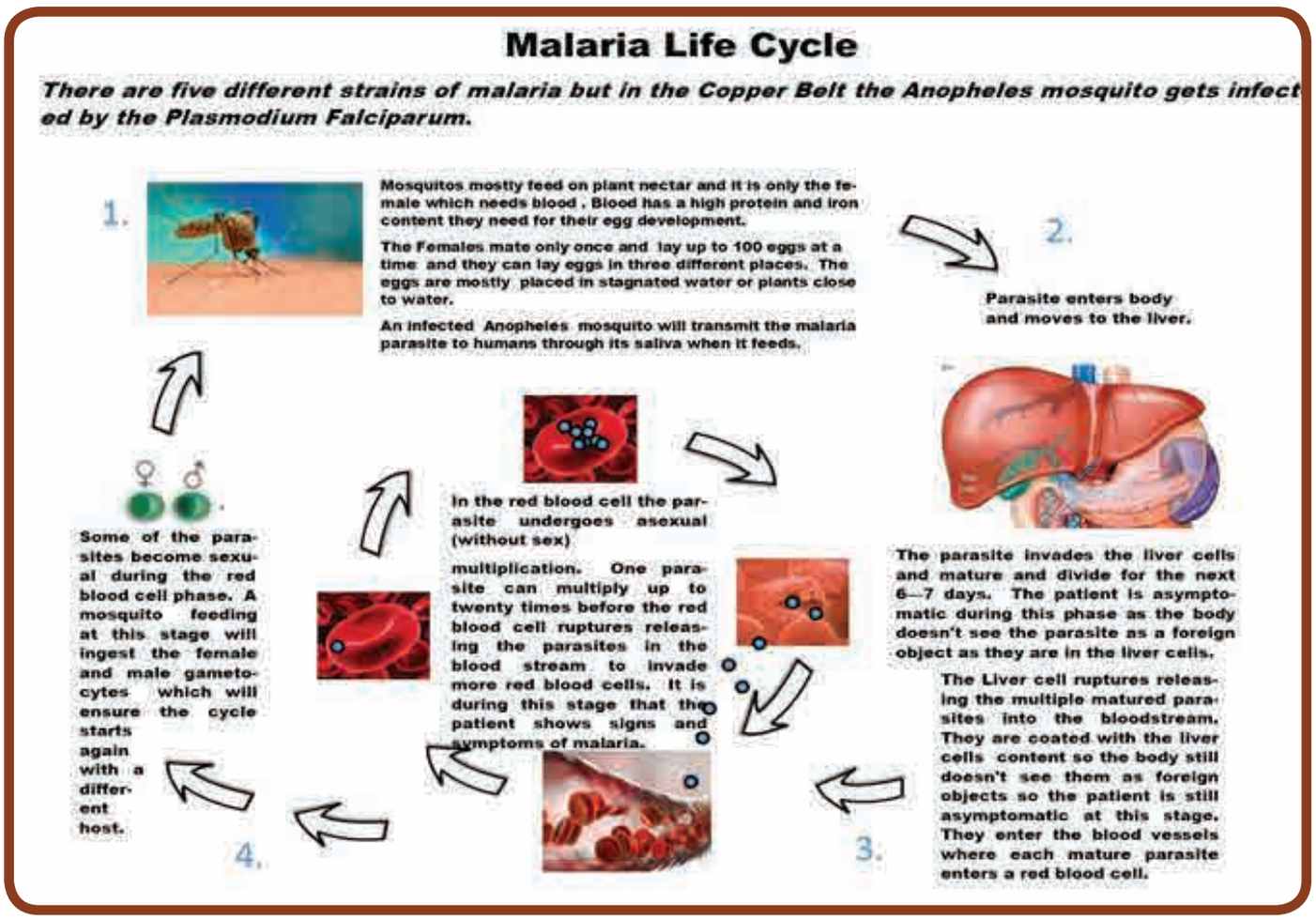
He said Elephantiasis was caused by the Filarial worm Wuchereria Bancrofti which is transmited by mosquitoes. He said once infected, the disease may not manifest for a few years but would manifest as swelling of the extremities, affecting the breasts, legs and/or arms of both men and women.

He advised people in the district to take the medication provided during the campaign to prevent infection and to also use Insecticide-Treated bed Nets (ITNs) and clothing to cover exposed body parts to prevent mosquito bites.
The Global Programme to Eliminate Lymphatic Filariasis (GPELF) was launched by the World Health Organization (WHO) in 2000, while Zambia started administering the drug in 2016 in nine districts.

In 2003, the Ministry of Health started a program to eliminate Lymphatic Filariasis by mapping the distribution of the disease up to 2010 and identified 59 districts as endemic of LF with a prevalence ranging from 1 percent to 53.3 percent.

Effects of Lymphatic Filariasis in men

WHAT IS MALARIA - Cartoonist: Sooi Lombard



Malaria is a life-threatening disease. It is typically transmitted through the bite of an infected Anopheles mosquito. Infected mosquitoes carry the Plasmodium parasite. When this mosquito bites you, the parasite is released into your bloodstream. Once the parasites are inside your body, they travel to the liver, where they mature. After several days, the matured parasites enter the bloodstream and begin to infect red blood cells.

Signs and Symptoms of Malaria

The parasite is a foreign object to the body and the body initiates its defense mechanism to try and get rid of the danger. One of these protective responses is to increase the bodies temperature to push it outside the ideal temperature range for the viruses, bacteria and parasites. This results in the flu like symptoms such as body pains, fever and headache.

The red blood cells also change how they react to each other as they become more drawn to each other. This makes the blood thicker and harder to flow through the smaller blood vessels, especially in the kidneys and joints. It is one of the main causes for the joint and lower back pain.

The malaria parasite also damages the red blood cells, thereby reducing the bodies oxygen supply capabilities and at the same time the parasites use more glucose (sugar which is the bodies diesel) resulting in the patient becoming weak with exhaustion.

Without treatment, the parasites will continue to breakdown the red blood cells to the level where the body cannot oxygenate its organs. The organ that is most sensitive to this change is the brain and it will eventually lead to a comma and death.

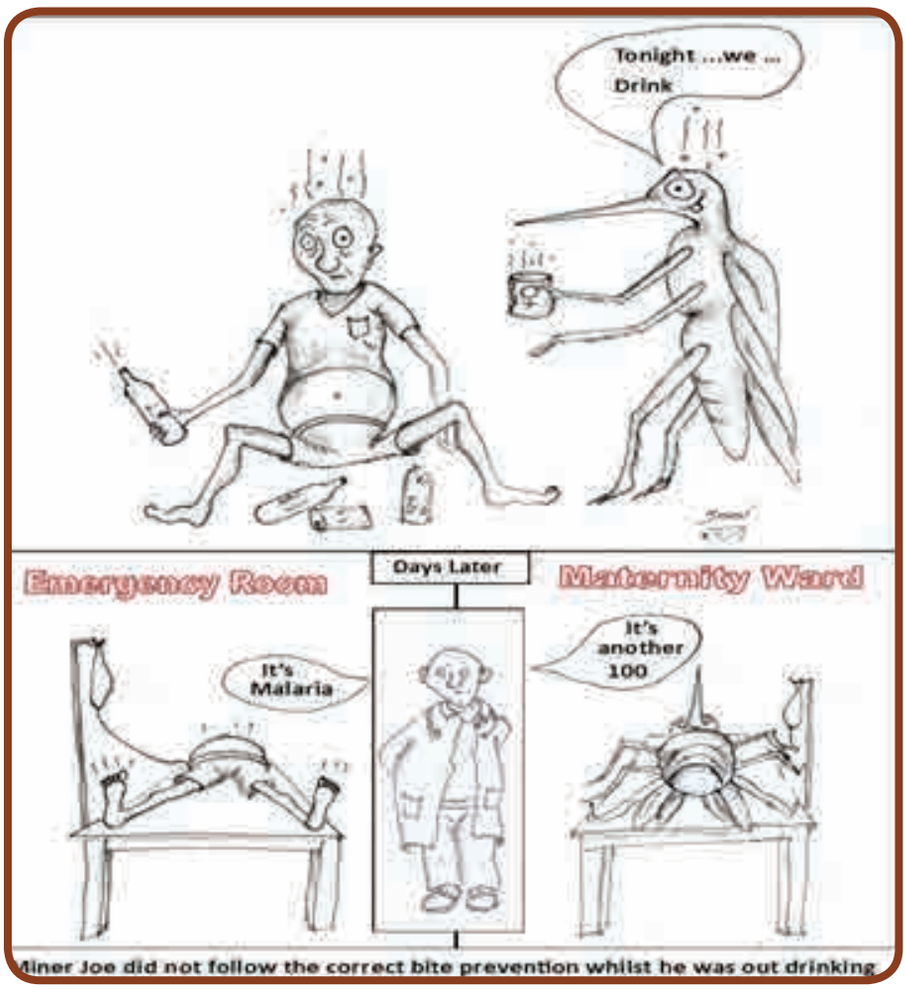
Malaria Prevention

Malaria prevention can be divided into two categories namely: bite prevention and malaria control.

Mosquito bite prevention

You cannot get Malaria if you do not get bitten by an infected mosquito. To do this, you need to do following:

- Stay somewhere that has effective air conditioning and screening on the doors and windows. If this is not possible, make sure doors and windows are closed properly.



• If you are not sleeping in an air-conditioned room, sleep under an intact mosquito net that has been treated with insecticide.

• Use insect repellent on your skin and in sleeping environments. Remember to reapply it frequently. The most effective repellents contain diethyltoluamide (DEET) and are available in sprays, roll-ons, sticks and creams.

• Wear light, loose-fitting trousers rather than shorts, and shirts with long sleeves. This is particularly important during the early evenings and at night, when mosquitoes prefer to feed.

Malaria Control

Malaria control is all about eliminating the breeding ground for mosquitos. The way to do this is to do the following;

• Ensure that your garden is free of any container that can hold water for up to a week. These containers are empty; drink cans, plastic bottles, used tires, open metal posts and any litter that can hold water.

• Make sure there are no stagnated pools of water in your garden.

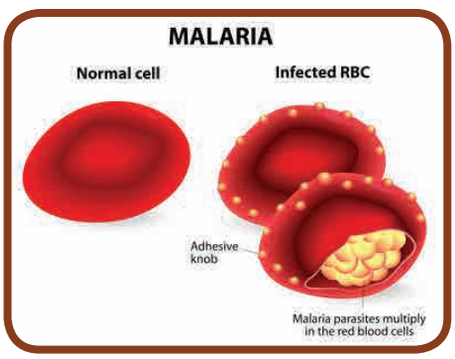
• Ensure that the grass is kept short and that the garden is not over grown.

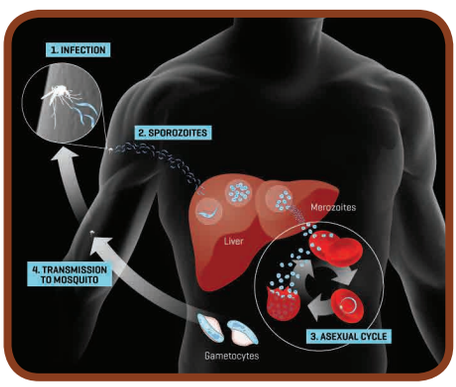
• Vector spraying programs that target all the houses in an area. Vector spraying is ineffective if only one house is sprayed in an area.

Chemoprophylaxis

There are a variety of anti-malarial medication available and you can visit your nearest clinic for more information on the different types. An important fact to know is that you can still get malaria even though you are on Chemoprophylaxis.

Most people living in areas where malaria is rife become complacent and self-medicate because they think they know malaria. Malaria still kills about 500, 000 people a year and pregnant woman and children under three years of age are at high risk. The key is to go for early diagnoses and treatment at the nearest clinic or hospital.



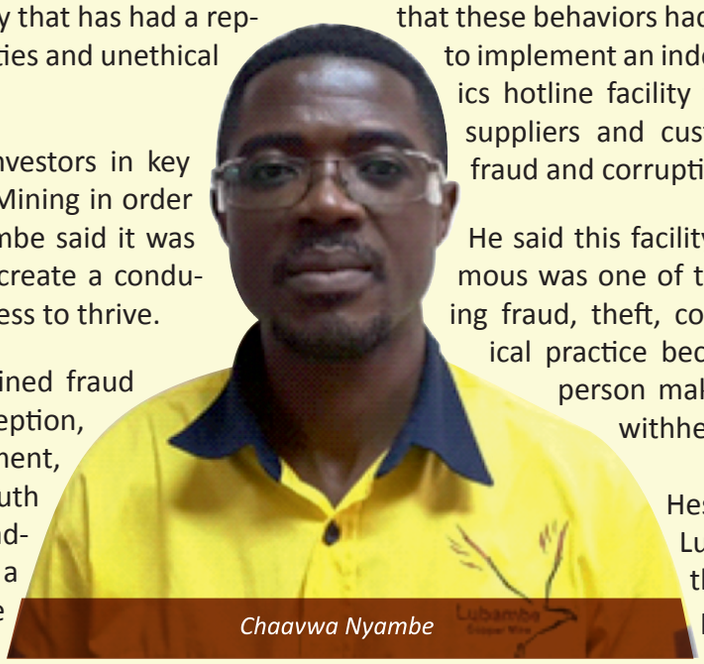


"NIP FRAUD IN THE BUD" - NYAMBE

Lubambe Security Manager Chaavwa Nyambe says fraud is a vice that needs to be nipped in the bud because it had the potential to negatively affect the operations of a business.

Nyambe said a company where fraud was rife could not attract investors because no one wanted to invest or deal with a company that has had a reputation of fraudulent activities and unethical behavior.

He said Zambia needed investors in key economic sectors such as Mining in order to grow its economy. Nyambe said it was critical for the country to create a conducive environment for business to thrive.



Chaavwa Nyambe

The Security Manager defined fraud as "an act or course of deception, an intentional concealment, omission or distortion of truth to gain unlawful or unfair advantage or inducement of a person to part with some valuable item or surrender a legal right". Nyambe noted that fraudulent activities had the potential to affect the morale of workers in a company and disrupt the growth or operations of a business.

"Employees engaging in fraudulent activities risk suffering personal embarrassment or bearing a lifetime stigma," he said.

Nyambe pointed out that regardless of their status in the company, employees of Lubambe needed to exhibit exemplary behavior and high levels of ethical standards which could lead to the attainment of the company's vision of being the Best Copper Mine in Zambia.

Nyambe said fraud and other forms of unethical behavior were dismissible offences at Lubambe and that these behaviors had compelled management to implement an independently managed ethics hotline facility that allowed employees, suppliers and customers to report crime, fraud and corruption confidentially.

He said this facility called Tip - Offs Anonymous was one of the safest ways of reporting fraud, theft, corruption and any unethical practice because the identity of the person making a report was always withheld.

Hes has urged employees at Lubambe to make use of this facility by making reports or disclosures using the Tip - Offs Anonymous Hotline 5080 on MTN, AIRTEL and ZAMTEL.

Nyambe also noted that enforcement agencies could get involved in a case if the offence bordered on criminality. For a corporate entity, the directors of the company also faced the prospect of criminal prosecution if found wanting, while Lubambe reserved the right to blacklist any company from the supplier database if found engaging in unethical practices.

LUBAMBE WARNS ENCROCHERS

Kafwira National Forest No. 44 in Chililabombwe District

Lubambe Copper Mine has cautioned members of the public against settling on mine land on the Northern side of the mine bordering with Kasumbalesa Border Post.

Mine Security Manager Chaavwa Nyambe said the land in question which was being sold illegally to unsuspecting members of the public was unsafe for human habitation because it was a potential caving area.

Nyambe warned that those involved in the vice also risked losing their money as the land they had occupied was on Lubambe's title SUB Q of Farm1884, in extent 2657.09996 hectares.

He added that all trespassers and those that had bought mine land illegally risked being prosecuted. Nyambe has since advised member of the public to follow the right procedure when acquiring land to avoid potential problems.

Meanwhile, Chililabombwe District Forestry Officer Richard Chongo has bemoaned the high rate of deforestation in the district.

Speaking to Eagle writer, Chongo said the indiscriminate cutting of trees was saddening.

He disclosed that the district had eight forest reserves where trees were being cut at an alarming rate.

Chongo said out of the eight forest reserves, one was classified as a Local Forest Reserve and seven as National Forest Reserves. He also noted that out of the 33,328 hectares of forest cover in the district, half of it had been encroached by squatters who had settled in the forest reserves, conducting various illegal activities such as charcoal burning, sand mining and illegal cultivation of various crops.

The eight forest reserves are: Kamenza FR. NO. 19, Konkola FR. NO. 20, Kafwira FR. NO 44, Kirila FR. NO. 18, Dome FR. NO. 21, Nsato FR. NO. 17, Border FR. NO 56 and Hippopool FR NO. 3.

"Of the eight forest reserves in the district, Kamenza, the one closest to Central Business district with a hectarage of 4, 228 was the most affected with only a hectarage of 1, 500 remaining", he said.

Chongo has appealed to all Chililabombwe residents to guard the Forests jealously and ensure that they are well protected for the benefit of all citizens in the country.

He also urged Communities to plant trees and value them because the future of Forests was bleak if people continued to cut trees without taking precautions.

Chongo further outlined some of the effects of deforestation as: loss of biodiversity, improper growth of trees and increased water pollution which ultimately contributed to global climate change.

The Forestry Officer has also called for stakeholder collaboration in stopping the scourge.

let's {CHAT!}

With Daniel Chihili

Life is full of choices, and the choices we make have consequences, if good we get a reward and if bad a price must be paid. There is no one who is born with greatness, all persons that have become great did so by choice in whatever endevours.

You can become great wherever you are and in whatever you do!
In October 1911, two teams of explorers lined up the coast of Antarctica, with the same goal of being the first human to reach the South Pole.

One was led by an Englishman Robert Falcon Scott, the other Roald Amundsen, a Norwegian. They left within days of each other. Amundsen and his team got there first, Scott and his team got there 34 days later! Amundsen and his team made it back to their base camp on the precise day they penned in their planning journal while Scott and every member of his team died on the way back 15 kilometers from the Supply depot.

They had the same objectives, same conditions, same terrain but how come the other team made it? Why do some people thrive in uncertainty and even chaotic conditions when facing forces outside their control while others do not?

Why do some leaders "the Amundsen of this world", prevail in the most difficult circumstances, difficult environments while others fail to achieve the greatness or maybe even fail out-rightly in those same difficult circumstances?

What are the leadership behaviours between Scott and Amundsen?

First is fanatic discipline: Amundsen resolved to do a "20-kilometer march" everyday as long as weather conditions were favourable while Scott showed a more erratic pattern! Fanatic discipline is the discipline of not going too far, overstretched and leave yourself exposed to unforeseen things that may hit you. What is your "20-kilometer march"? What's your standard of performance to hit? What do you need to do to achieve a consistent consecutive performance?

Second, you must blend your discipline with empirical creativity, adopting initiatives that have been tested, have worked and validated. Once you marry discipline and creativity, the discipline will amplify your creativity rather than destroy it.

Third, you need to put your paranoia in the right context! Take your paranoia (fear) and translate it into preparation, buffers, into things you do before times get tough. What matters is what you do before you are in trouble, what you do before difficult times come. Scott and Amundsen both calculated the amount of supplies they would need at each depot by Amundsen multiplied by three because he might need them, the both put flags on their depots, but Amundsen put black markers just in case something happened to the flag.

If you are only strong when conditions are good, it is called malpractice, learn to build contingences, like Amundsen! Be specific, methodical and consistent in whatever you do.

The greatest danger is not failure, the greatest danger is to be successful without understanding why and how you were successful in the first place!

Godspeed! We have started off towards being the best Mine in Zambia!

"The signature of mediocrity is not unwillingness to change, if you do not change you will fall or become irrelevant, but the true signature of mediocrity is chronic inconsistency!"

LUBAMBE EMBARKS ON MAINTENANCE OF ROADS

Lubambe Copper Mine has embarked on a road maintenance project to ensure that the international road from Chingola to Chililabombwe is safe for all road users.

The mine is working with the Local Authority to maintain the international road from Konkola in Chililabombwe to Solwezi turn off in Chingola.

Lubambe Copper Mine Civil Engineer Davey Phiri says a good road network was critical to the country's economy as it conveyed various goods and services required for the smooth running of business.

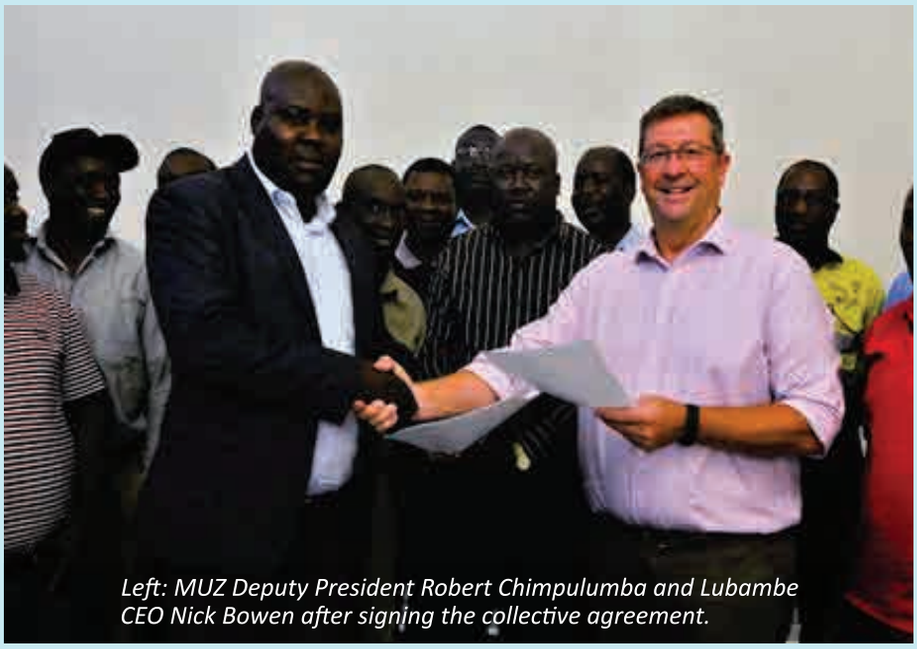
Phiri said Lubambe had also embarked on construction of an emergency access road to reduce the heavy congestion on the international road particularly for traffic heading to the mine. The capacity of the international road to convey heavy traffic to and from the democratic Republic of Congo is now clearly inadequate.

"An access road is being constructed from Konkola Turn-off check point to Five Shaft area where it joins the international road," he said. Phiri added that the emergency access road would mainly be used by trucks carrying concentrate from Lubambe, mine buses ferrying employees as well as private vehicles going to and from the mine.

Lubambe employees patching potholes on the international road in Chililabombwe leading to Kasumbalesa Border Post

Grader Operator working on the Lubambe emergency access road.

LUBAMBE UNIONIZED WORKERS GET PAY RISE



Left: MUZ Deputy President Robert Chimpulumba and Lubambe CEO Nick Bowen after signing the collective agreement.

Unionized workers at Lubambe Copper Mine have received a nine percent salary increment effective from January 1, 2019. Speaking after the signing of the collective Agreement, Chief Executive Officer Nick Bowen said Lubambe majority shareholders EMR Capital, did not believe in protracted negotiations but in getting things done quickly.

He was optimistic that Lubambe would have a great year ahead following the signing of the Collective Agreement. The CEO said he was happy to award a pay rise to workers if they were equally committed to work hard and increase production. Bowen added that it was only high productivity that could convince the shareholders of the profitability of the current mine and garnering of their support to open a second mine. Improved conditions for the future, also depended on productivity of all employees.

Bowen used the occasion to thank employees for recording a 60 percent increase in production in 2018 and was hopeful that this statistic would double in 2019. The Collective Agreement amended conditions of service such as salaries, acting allowance, funeral grant and shifts, among others.

Bowen described the agreement, whose objective was to amend the rates of basic pay and conditions of service of employees as a "fair deal", adding that Lubambe management did its best to ensure that workers were happy. January 18, 2019 marked the end of a three-day negotiation and the signing of a new Collective Agreement which would usher in new salaries and conditions for unionized workers for the year 2019.

Representing the workers were the three union bodies which included: The Mineworkers Union of Zambia, Union of Mines and Allied Workers and United Mine Workers Union of Zambia. The Management Negotiating Team was led by General Manager of Operations Tony Davis.

The signing ceremony held at Protea Hotel was characterised by smiles from both parties. Mineworkers Union of Zambia (MUZ) Deputy President Robert Chimpulumba said Lubambe had recorded a major stride by concluding the negotiations speedily. Mr. Chimpulumba said that he was very happy that the new Lubambe management believed in expediting the negotiation processes than wasting time, a development he said was worth emulating by other employers.

Lubambe management staff and union representatives after the signing of the collective agreement

"NEW LUBAMBE VISION ATTAINABLE" -LUBAMBE MINERS

Miners at Lubambe Copper Mine have said the new Company's Vision to become the Best Copper Mine in Zambia is attainable.

Speaking in an interview with Eagle writer, Ramp 1, 2 and 5 Section Mine Captain Nondo Masongo said Lubambe's Vision though very ambitious, was attainable. Masongo pledged to support management in the attainment of the vision by working hard and ensuring that daily and monthly targets were met.

He also commended the mine for procuring new equipment which he said would play a major role in increasing production. "Sustaining Copper production of above 40, 000 tonnes a year will not be a challenge," he said.

Masongo expressed happiness that the Vision recognized that people were a critical factor in the success of the mine. He commended management for introducing a new "Daily Target Bonus Scheme" in October last year which is paid to employees monthly in a separate pay run if employees do not suffer Lost Time Injuries (LTI) or Medical Treatment Injuries (MTI) during the month. In addition, employees qualifying for the bonus must not record any disciplinary case during the month.

Underground Mine Captain Chomba Musonda

And Underground Mine Captain Chomba Musonda said that miners at Lubambe wanted to work in a safe and secure environment where their safety could be guaranteed. He expressed happiness that Lubambe has maintained a good safety record. He said it was motivating to note that the new mine owners, EMR Capital were not only interested in making profits but had prioritized the safety of employees.

Chomba urged fellow miners to be accountable and ensure that they were equal to the task if greater things were to be achieved. He said the future of Lubambe looked bright and that everybody needed to show commitment to the attainment of the Vision.

Meanwhile, Shafts Mine Captain Chibuye Chisi echoed the sentiments by his fellow miners, adding that the new equipment gave miners the comfort to minimize fatigue and exposure to dust because of the advanced facilities that came with the equipment such as air conditioners and proper ventilation systems.

He noted that there was need for behavioral change for the Vision to be attained. Welcoming plans to implement the Dewatering project, Chisi said that plans to have a bigger dewatering chamber would ensure that water was properly managed, a development he said would lead to increased Ore production.

The Mine, located in Chililabombwe District approximately 40 kilometers North of Chingola, envisions to be the best Copper Mine in Zambia by boosting copper production to above 40, 000 tonnes per year and prioritizing safety as a key driver to achieving this.


Mine Captain Masongo Nondo after inspecting his drill rig at TM3

LUBAMBE MINE WOMEN CELEBRATE INTERNATIONAL WOMEN'S DAY IN STYLE

Lubambe Copper Mine female employees celebrated this year's International Women's Day in style.

On March 1, female employees from Lubambe who included Engineers, Surveyor, Lawyer, Electrician and Communication officers hosted a careers motivational talk for 950 Girls at Kabundi Secondary School in Chingola. The aim of the motivational talk was to encourage the girl child to "dream big".

The Lubambe women were represented by Esther Phiri an Engineer, Annie Kawandami a lawyer, Chitalu Musonda an Electrician, Chimwemwe Mwanza a surveyor and Loyce Saili a Communications specialist.

On March 7, The Lubambe women Donated assorted cleaning materials worth K14,500 to Kakoso first-level hospital in Chililabombwe.

Lubambe Copper Mine Communications Manager Loyce Saili said Lubambe was happy to put a smile on the faces of medical staff at Kakoso Hospital. Speaking on behalf of Management, Saili said the cleaning materials would help in maintaining cleanliness at the hospital.

And Kakoso sister in charge, Fanny Zulu thanked Lubambe Management for the donation. She said the cleaning materials would help the hospital to create a conducive environment for patients as the wards and surroundings would be kept clean.

And Lubambe Chief Executive Officer, Nick Bowen congratulated all the Lubambe Women on celebrating their day.

In a speech read on his behalf by Lubambe Chief Financial Officer Eustace Munsaka during a luncheon hosted for all Lubambe Women, at Nchanga Golf Club, Bowen said International Women's Day was all about unity, celebration, reflection, advocacy and action. He said the day which had been celebrated for well over a century had continued to grow from strength to strength.

"As we all know, International Women's Day is a global day celebrating the social, economic, cultural and political achievements of women. The day, March 8 also marks a call to action for accelerating gender parity, "he said.

Bowen noted that it was the desire of Management to support the development and advancement of women at Lubambe. The CEO urged the women to continue working hard and contribute to the development of the Mine and the Country at large.

Bowen commended the Lubambe Women for making the IWD celebration a success and for the charity work they did.

This year's International Women's Day was celebrated under the theme "Think Equal Build Smart, Innovate for Change".

Lubambe women during the match past in Chingola

Lubambe Women donated assorted cleaning materials to Kakoso hospital

FROM THE LENSES

Lubambe mine women cleaning Kakoso hospital as part of IWD activities on 7th March 2019.

Part of Lubambe Management Team at Women's Day celebration.

Men at work

Lubambe CEO Nick Bowen and CFO Eustus Munsaka share a light moment with H.E. President Edgar Lungu at State House in February

CSR Manager Lomthunzi Mbewe (in a reflector) during her tour to the CSR projects in Konkola

Lubambe CEO Nick Bowen and CFO Eustus Munsaka during a meeting with H.E. President Edgar Lungu at State House in February

Lubambe
Copper Mine