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ABOUT PUBLICATION

Mining Zimbabwe is the premier source of Zimbabwe Mining News. Our core focus is the Zimbabwe Mining Industry, trends, new technologies being developed and used to improve this crucial sector, as well as new opportunities and investments arising from it. Mining Zimbabwe's sole purpose is growing and empowering the Mining Industry and highlighting all its challenges as well as putting forth expert solutions

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Mines Act does not give power to the PMDs to make any determination



Fidelis Manyuchi

The Mines and Minerals Act does not give powers to a Provincial Mining Director (PMD) to make any determination, PMDs, therefore, need to put on Mining Commissioner's hat before hearing any dispute and making any determination, leading corporate and commercial legal practitioner Fidelis Manyuchi said.

Rudairo Mapuranga

In his presentation on the legal framework on disputes and business rescue proceedings in Zimbabwe at the Parliamentary Portfolio Committee on Mines and Mining Development's All Stakeholders Workshop on Gold Sector Value Chain held in Kariba Manyuchi said the Mining Commissioner's Court is headed by the Mining Commissioner and not by the PMD because the Mines and Minerals Act creates the office of the Mining Commissioner and not of the PMD.

"You will note that I keep using the phrase Mining Commissioner and not Provincial Mining Director. This is simply because the Mines and Minerals Act creates the office of the Mining Commissioner and not the Provincial Mining Director.

"The Act does not give powers to a Provincial Mining Director to make any determination. The High Court has emphasised this point

over and over again. It said so in the: Gombe Resources (Private) Limited vs The Provincial Mining Director, Mashonaland Central and 3 Others HH 405-18; a 2018 case; and it repeated itself again in 2021 in the Pahasha Somalia Mining Syndicate vs Earthrow Investments (Private) Limited & 2 Others HH 450-21.

"The Provincial Mining Directors have to be alive to the fact that they need to wear the hat of a Mining Commissioner, before hearing any dispute and making any determination. It seems some of them keep missing this point as they keep making decisions as Provincial Mining Directors, which decisions keep getting overturned by the court.

"Maybe the Honourable Minister would like to take note of this and ensure that the Provincial Mining Directors are properly capacitated," Manyuchi said.

According to Manyuchi the Mining Commissioner's court is key in dispute resolution as it is manned by officials from the Ministry of Mines.

"It is imperative that its processes and procedures are well understood. If parties agree in writing, as provided by s345 (1), the Mining Commissioner shall have the jurisdiction to investigate and make decisions on a complaint or dispute.

"From the onset, it is important to note that the Mining Commissioner's Court: Does not have any criminal jurisdiction except as provided in section three hundred and eighty-nine which allows the Mining Commissioner to accept an admission of guilt and accept the prescribed fine. In addition to that, the Mining Commissioner's Court does not have the jurisdiction or powers to adjudicate upon any claim for a debt or damages.

"Once a Mining Commissioner is clothed with the proper jurisdiction, he or she, in conducting the investigation and making a determination, must be guided by the provisions in section three hundred and forty-six to section three hundred and sixty.

"Sections 346 through to 360 of the Act are quite detailed on how the Mining Commissioners should conduct the investigation and decide on a dispute," he said.

"The Mining Commissioner's court is a court of justice and as such, justice must not only be done but also seen to be done. This means that proceedings leading to a decision, and the actual decision must be both procedurally fair and substantively fair.

"On the procedural aspect, all the rules of natural justice must be adhered to as expounded in the Act.

"This includes giving the parties involved a reasonable opportunity to make adequate representations before a decision is made.

"In concluding this point, the Mining Commissioner's Court was created to resolve disputes quickly without the normal delay that is experienced in the court system. However, it must always be remembered that justice cannot be traded for expediency. Appeals against the decision of a Mining Commissioner's Court lie with the High Court.



Students create a breakthrough mine ventilation model

The model was designed to encourage small-scale mines to use artificial ventilation systems like the Exhaust Ventilation system used on the model.

Three students from the Zimbabwe Schools of Mines have created what could be Zimbabwe's reliable and affordable mine ventilation system for both the small-scale and large-scale mining firms.

Rudairo Mapuranga

The Room and Pillar mine model which was exhibited at this year's Mining, Engineering and Transport Expo (MINE ENTR) was designed by three students Ephraim Musekwa, Tafadzwa S. Makata and Melina Moyo.

According to the students, the model was designed to encourage small-scale mines to use artificial ventilation systems like the Exhaust Ventilation system used on

the model.

"The Exhaust ventilation system may only use one giant centrifugal fan on one shaft which will be the foul air exhaust shaft. So, this system requires more than one shaft to be in place at an underground mine, one or two shafts for fresh air intake and the other shaft for foul air exhausting," the team said.

According to the students, the model was designed for various purposes which include, exhibiting how the underground Room and Pillar mine will look like when the overburden is removed, to show the underground mine room and pillar airflow system, exhibiting how the Exhaust Ventilation system works, to exhibit how fresh air strikes from the surface to underground workings, to

show all ventilation elements like ventilation walls, ventilation doors, regulators and brattices and to show how fresh air is directed to the bottom of the mine, using the force-exhaust overlap system (auxiliary ventilation) as well as to show how foul air moves from underground to the surface through an exhaust fan.

How does the Exhausting Ventilation System work?

The principle of this system is primarily based on depressurizing the underground mine workings by the way of drawing foul air out of the mine using a single fan located on the surface through a vertical shaft. It regularly does not have any particular component to draw outside air into the underground workings but the negative pressure created underground draws in fresh air through declines or intake shafts.

Benefits of the Exhausting Ventilation System in underground mines

- The system is relatively easy to work with and does not require much Capex to install. Typically, it consists of a single fan that is connected to a centrally located exhaust point, therefore, the operating cost is low enough and makes the system more economical.
- The haulage roads, where most travel is done, are kept free from dust, gas, and smoke, hence allowing miners to perform their work in fresh air.
- In the event of a fire or explosion, exhausting ventilation enables the rescue work to proceed more rapidly, because the fresh air is on the haulage road, which provides an easy route for carrying material and equipment to make mine repairs.

- Both intake airways and track entries serve as escape ways if stopping lines are well maintained.

- Greater power savings are possible if mine openings are small. This is due to the potentially greater recovery of velocity pressure through the use of discharge evase (gradual expansion of ducts) on exhaust fans.

According to the students, the Room and Pillar mine model was first off designed by Zimbabwe School of Mines (ZSM) college students as a Group Practical assignment for the Mine Ventilation Module on the second of June 2022. It was a group of 10 students 5 from the Mining class and 5 from the Survey class. They designed it using cardboard boxes and presented the model to the ZSM Mining Lab-technician Mr Dube and our lecturer Mrs Z. Ndiweni. They appreciated the model and tasked the crew to design another model with better material.

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CHARMS AUSTRALIAN INVESTORS

The Minister of Mines and Mining Development Hon Winston Chitando has called on Australian investors to consider investing in Zimbabwe's mining sector as the country seeks capital for mineral exploration.

Keith Sungiso

The Minister of Mines and Mining Development together with bodies presenting miners and the mining value chain, the Zimbabwe Miners Federation (ZMF), Chamber of Mines Zimbabwe and the Minerals Marketing Corporation of Zimbabwe (MMCZ) attended the 21st edition of Africa Down Under (ADU) in Perth Australia to promote the achievement of the US\$12 billion mining industry by courting "sustainable investors".

According to the Minister, the basic concept of growing the mining industry

is through mineral exploration the country needs to fund exploration as it is underexplored.

Globally, to replace minerals that the country is mining, around 10 per cent of all capital expenditure in mining goes towards exploration, however, in Zimbabwe, it is near 0 per cent with the Finance Ministry availing a ridiculous budget for exploration.

"For any mining jurisdiction to develop, you have to have the geology, the skills and the capital. What we need is the



MMCZ, CoMZ and ZMF leaders pose for a picture in Perth, Australia

capital to develop our geology. So we are here because Australia is very strong from a capital raising perspective.



The premier Africa-Australia business forum

"Zimbabwe is largely under-explored, most of the capital we require is for exploration. We would want to see exploration across all the mineral bases in the country," Minister Chitando said.

Zimbabwe used to be one of the largest producers of gold in Africa but currently lags because no new deposits are being found like in other countries in Africa.

The rewards of successful exploration and development can be large if a mineral deposit is discovered, evaluated, and developed into a mine. For a mining company, successful exploration and development lead to increased profits. This means the country needs to invest in exploration to achieve the projected US\$12 Billion mining sector.

According to Minister Chitando, it is of utmost importance for Zimbabwe to get exploration capital as it seeks to establish world-class mining operations like Zimplats, Unki Mine and Mimosa.

“The mining standards in Zimbabwe are second to none, that’s a fact, take the likes of AngloAmerican, Caledonia, and Implats among others operating at the highest mining standards you can get anyway in the world. A lot of people who have never followed the mining activities in Zimbabwe may have a lot of unfounded fear, but if you come and look at the high mining standards that we have in the country, they are second to none.

“Most of the opportunities in the country are in exploration. We have an increasing appetite for companies that want to undertake exploration. With due respect to other markets, the market in Australia understands mining significantly,” Hon Chitando said at ADU.

ADU is the leading forum for Australian-African business and government relations and was first launched to raise awareness of Australia’s interests in African mining and energy. The three-day event has evolved to become the largest African-focused mining event held outside the continent itself which is reflected by the number of high-profile participants who attend each year.



Since its inaugural conference in 2003,

ADU has showcased many success stories about Australian companies and organisations working across Africa.

In addition to creating a melting pot for pro-Africa-Australia relations, ADU forms the principal pillar of “Africa Week”, Australia’s week-long celebration of the strong and growing business, social and cultural ties between Australia and the entire African continent. “Africa Week” comprises a full week of satellite events on research, education, infrastructure, sustainable development, capacity building, energy, movies and the arts.



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Prospecting for lithium in Zimbabwe on the rise



It is not a secret that Lithium has attracted world recognition as a significant mineral playing a substantial role in electric cars and other clean tech gadgets, Zimbabwe has not been spared with this development as prospecting for lithium in the country has increased significantly.

Rudairo Mapuranga

According to a government official, although most lithium projects in Zimbabwe are at the exploration stage, there has been a lot of prospecting and pegging of lithium mining claims in Zimbabwe.

"Most projects are still in the exploration stage, however, a few lithium projects are in the mine development stage. We also have noted a lot of pegging and prospecting for lithium though not to the extent of overwhelming our provincial mines offices," Dr Kambamura said.

It has been reviewed that due to the increase in the world's appetite for

electric vehicles (EVs) demand is expected to rise in the coming years.

A February study from S&P Global Platts Analytics found that "global light duty electric vehicle sales reached a record high of 6.3 million units in 2021, up 102 per cent year on year, with this number expected to rise to 26.8 million units in 2030. The updated 2030 forecast is 23 per cent higher than the earlier forecast, published in June 2021.

As automakers (and the renewable energy sector) scramble for lithium, nickel, cobalt, graphite, rare earths, aluminium, manganese and copper securing supply may ultimately be a bigger issue than costs.

To produce 20m vehicles Tesla alone needs more than the total volume of lithium and natural graphite produced last year, almost a third of the magnet rare earths, 36% of the cobalt, and so on, this shows that finding new lithium deposits is of importance to sustain the rise in demand of EVs.

Australia Stock Exchange listed mining and exploration junior Prospect Resources is confident that the exploration of battery and electrification metals such as cobalt, lithium, manganese and nickel in Zimbabwe can bring extremely significant results.

According to a company report signed by Prospect Resources Corporate Development Manager Mr Nick Rathjen, the firm is highly motivated that Zimbabwe is the best mining destination for battery and electrification metals that are targeted towards the world agenda to go green.

"Zimbabwe is highly prospective for targeted battery and electrification metals," Rathjen said.



Zimbabwe has the potential to supply over 20 per cent of the world's lithium appetite and potential able to supply over half of Europe's demand for the next 30 years.

Renowned research groups have predicted that the European Union will need about 60 times more lithium than it is currently consuming and 15 times more cobalt for electric vehicles (EV) batteries and energy storage by 2050. It is estimated that the demand for rare earths minerals used in high-tech devices and military applications will increase 10-fold in Europe over the same period.

The European Union will not be able to ditch lithium and raw earth imports due to the world's adoption of clean energy and the fact that recycling of elements could be deemed a danger to the climate. Bikita Minerals is currently the only active lithium mine in Zimbabwe with

several other lithium projects at various stages of development, establishing its position among the major producers in the world.

Lithium was classified by the government as strategic in helping the country achieve the US\$12 BILLION mark by 2023 with the mineral fetching half a billion.



The country also boasts of MIRRORPLEX (Pvt) Limited's lithium project in Shamva which is postured to become Zimbabwe's biggest hard rock lithium producer.

Mirrorplex has the potential to grow into a world-class lithium mine with Results from 240 Rock Chip samples taken from the exposed Bonnyvale pegmatite body at the Shamva Lithium Project providing high-grade lithium assay results up to 3.13% Li₂O and surface sampling at the Loch Ness prospect revealed two more pegmatites containing high Li₂O grades up to 4.82% Li₂O.

Other lithium projects are Arcadia by Prospect Resources, Zulu and Kamativi projects which would cement the country's position on the global lithium market.

Zimbabwe should now focus on value addition through reopening closed factories thus becoming one of the largest suppliers of lithium batteries and clean energy.



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A milestone for Zim as Magnus introduces technology to better gold capture

Junior mining company Magnus Mineral Resources (PVT) Ltd has signed a Memorandum of Understanding (MoU) with US-based Sixth Wave Innovations (CSE: SIXW) (OTCQB: SIXWF) (FSE: AHUH) which provides for ongoing test work using SIXW's patented IXOS® molecular imprinted polymer for extraction and purification of gold and silver at the Penhalonga Gold Project Mine.

IXOS® is a patented nanotechnology for metal extraction processing system designed to selectively capture gold, silver, lithium, Copper and other rare earth metals at high recovery (10%+) more than the traditional Activated Carbon technologies.

The molecularly imprinted polymer (MIP) ion exchange resin is expected to increase gold mining profits by around \$100 per ounce in processing savings.

The IXOS resin bead does not require an activation step for reuse and is supplied ready-to-use, with a range of particle sizes available to accommodate heap leach and resin-in-leach/pulp circuits.

According to the MoU, a comprehensive test program will be designed to include the feasibility studies already conducted at the Penhalonga Gold Property. The goal of the test work is a validation of IXOS®-Au's superior performance attributes in direct comparison to activated carbon as evidenced by Sixth Wave's multiple successful laboratory and field tests with varying ore types.

The MoU said that the technology will help both operations and the

environment. The Operational attributes include Higher gold capture, Lower to no attrition or lost Au from attrition Better kinetics, High capacity and purity resulting in a smaller plant and a less complicated circuit with fewer parts. While on environmental aspects, attributes will include Simple low-temperature elution, No thermal regeneration, Lower water usage, Recyclable elution chemicals, Lower CO₂ emissions and no toxic airborne emissions.

Upon agreement by both parties that test work has produced satisfactory and positive results, Sixth Wave and Magnus will enter into a definitive agreement under which Magnus will build an IXOS®-Au adsorption, desorption, and recovery (ADR) plant. The overall mining plan has a production target of 20tph of ore. Not including the pretreatment plant, the mill and IXOS-in pulp ARD plant's current USD\$60M budget. A cooperative project management plan is being developed. In turn, Sixth Wave will name Magnus as the exclusive distributor for IXOS®-Au in Africa and the countries that comprise the Gulf Cooperation Council (GCC).

According to Magnus Managing Director Mr Tanaka Solomon Nyabadza, his company seeks to embrace new technology to better the Zimbabwe mining industry and reduce operational costs.

"Magnus Mineral Resources (PVT) Limited seeks to embrace a new technological approach with the objective of bringing enhanced value to our stakeholders through the reduced

CAPEX/OPEX opportunities that IXOS®-Au offers.

"The Penhalonga Gold Project situated in the Odzi-Mutare Manica Greenstone Belt has over 2 million oz of gold previously mined. The property currently has 4 claims covering an area of 40 hectares, as pegged in 2019. Currently, artisanal, cooperatives and small-scale mines in and around the claims are producing 1kg to 5kg combined mining surface oxidized and mineralized reefs above 40meters deep.

"Two blocks out of 4 were randomly tested by trenching and the results so far are very encouraging," Nyabadza said.

Dr Jon Gluckman, President, and CEO of Sixth Wave was optimistic that the project will bring positive results to the Zimbabwe Mining community.

Sixth Wave and Magnus Mineral Resources (PVT) Limited look forward to a mutually beneficial collaboration. The test plan as contemplated will validate and extend laboratory testing to a field evaluation that will allow each company to make defensible, data-driven decisions about the next steps toward full adoption.

"Further, we are encouraged by the developing relationship between Sixth Wave and Magnus Mineral Resources (PVT) Limited and we will do our part to contribute to building a business case that will provide a significant return on investment for all stakeholders," Dr Jon Gluckman said.

HOW TO AVOID OVER-INSURANCE

Over-insurance is having excess insurance coverage/policies that covers the same risk or having insurance cover in excess of the value of the possible loss that the mine can experience. More often and rightly so, mines are focused on ensuring that they are not under-insured.

Over-insurance can occur where a mine has double insurance policies covering the same item especially on global programs with local mirror policies. It can also occur where there is an overlap of insurance policy coverage. Alternatively, it occurs when a mine unintentionally insures something for more than its current value

for example with housing units the common mistake is to insure at market value instead of rebuilding value. It also occurs where a mine can insure something that has been disposed or replaced. The drawbacks of over-insurance are many including higher insurance premiums based on the incorrect values and disputes at claims settlement especially where cash is paid in settlement. The cumulative impact of higher insurance premiums over several years can be quite significant to the mine.

At Firstlink we assist our clients to avoid over-insurance by ensuring that:

- i. Values insured at the inception of the policy are in line with the policy. For instance, there are some policies that require rebuilding value, some replacement cost and others market value. It is therefore important to ensure that the insured values are reflective of the correct value.
- ii. Overlaps in cover are minimised. We ensure that each policy or combination of policies gives our client the best scope of cover at affordable premiums.
- iii. We work with our partners to assist the client with valuations where these may not be available especially for assets with varying market values like Motor vehicles.
- iv. We conduct periodic site audits and surveys to physically check for insured items against the client's asset register. This often helps in identifying new assets not declared and removing old assets which have been sold or are no longer used by the company.

Ultimately whilst over-insurance is better than its twin (under-insurance) it is better to be correctly insured at the best premium.

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Fidelity to establish four gold centres in 2022

In an effort to have favourable proximity to the miner and channel gold produced into the government's purse for the achievement of the US\$4 billion mining industry by 2023, Fidelity Gold Refinery (FGR) is at an advantaged stage of establishing four more gold buying centres in the country.

According to a 2021 report by the Global Initiative Against Transnational Organised Crime, titled, 'Illicit Gold Markets in East and Southern Africa' over 70 per cent of the country's output has found its way into backdoor international markets.

Global Initiative estimated that due to proximity, about 50 per cent of Zimbabwe's estimated 1,5 million artisanal and small-scale gold miners (ASGM) have been selling the yellow metal to unscrupulous buyers who would then spirit it away.

However, according to FGR General Manager Mr Peter Magaramombe, FGR is working flat out to ensure that all the

gold mined in Zimbabwe will eventually end in the right hands. He said that FGR is constantly pursuing to create favourable gold trading models for the gold producers in order to ensure growth and investment in the gold sector.

"One of the initiatives we have put in place to improve gold deliveries to FGR is to increase our gold buying centres.

"We are in the process of opening four gold buying centres in the year 2022. So far we have opened a new gold buying centre in Shurugwi and is now operational and the other three are at the advanced stage of being opened," Magaramombe said.



FIDELITY GOLD REFINERY
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He also said that FGR has built a strong relationship with the country's largest body that represents artisanal and small-scale miners to improve gold deliveries to the country's sole gold buyer and exporter.

"Over the years Fidelity Gold Refinery (FGR) and ZMF have built an impeccable relationship based on mutual trust and a shared vision anchored on the attainment of achieving the US\$12 billion mining vision. Most importantly we have witnessed a steady but very exciting growth in the level of gold deliveries by the ASM to FGR. Without doubt, the ASM has become a shining beacon and anchor of the gold industry contributing about 60 per cent of all the gold delivered to FGR," Magaramombe said.

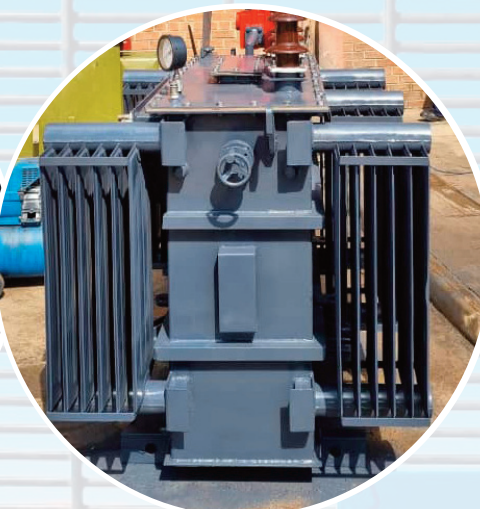
Magaramombe also said that FGR has improved its payment methods with miners now receiving their dues timeously without much delay.

"We continue to pay gold delivered timeously at all our gold buying centres, we assist in capacity building of the miners by collaborating with institutions of higher learning like the school of mines in the delivery of relevant courses and support, we have done this in the past and it has been successful," Magaramombe said.

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Gold deliveries increase 4 per cent, Gvt credits incentives



Gold deliveries to the country's sole gold buyer and exporter, Fidelity Gold Refinery (FGR) have been on an upward trajectory this year owing to gold incentives which were introduced by the government through the Ministry of Finance and Economic Development.

FGR statistics from January to July 2022, gold deliveries increased by 47.4 per cent to 18940.6322 kgs from 12852.5457 kgs. Artisanal and small-scale miners (ASM) nearly doubled their deliveries to 11 444.0958 kgs from 6824.7478 kgs in 2021, while Large scale gold producers increased to 7496.5364kgs from 6027.7979 kgs in 2021. The statistics show that the gold industry is well on the path towards the achievement of the US\$4 billion gold industry by 2023.

The statistics also show that gold delivery to Fidelity in July increased by 4.9 per cent increase to 2963.9129 kgs from 2824.6174 kgs delivered in 2021 with the ASM deliveries increasing by 2.5 per cent increase to 1998.1277 kgs from 1950.3063 kgs during the comparable month of 2021 while large scale gold producers deliveries also increased by 10.5 per cent

to 965.7852 kgs from 874.3111 kgs in 2021.

According to the Deputy Minister of Mines and Mining Development Dr Polite Kambamura, the government's positive policy intervention in the gold mining sector is bearing fruit. He added saying that the government was eyeing more growth in the gold industry.

"Government positive policy intervention into the sector is bearing fruit. The gold sector was incentivised by the government through the Reserve Bank of Zimbabwe (RBZ), and this has seen an increase in gold deliveries to FGR. However, the sector has the potential to score higher," Dr Kambamura said.

Gold deliveries during the first half of the year increased by 57.5272 per cent to 15 796.7193 Kgs from 10 027.9283 delivered in 2021 with Small scale miners accounting for 10 478.3106 kgs from 4 874.44415 kgs delivered last year, while large scale miners accounted for 5 498.4087 kgs from 5 153.4868 kgs delivered the previous year. Gold deliveries in June however decreased by 5.20227 per cent to 2 805 kgs from 2

959.0733 kgs delivered in June 2021. ASM deliveries however increased to 1 968.0192 from 1 833.4697 delivered in June 2021 with the large-scale deliveries decreasing significantly to 837.1151 from 1 125.6036 delivered in June of the previous year.

In May 2022 total deliveries to FGR increased by 79.5403 kgs per cent to 2994.7512 from 1668.0102 kgs delivered in May 2021, with small-scale miners accounting for 1 939.0712 kgs from 783.8105 kgs delivered in May the previous year while large scale miners delivered 1 055.6800 kgs from 884.1997 kgs delivered the previous year. FGR figures show that in April 2022 gold deliveries increased by 3.71761 per cent to 1621.9712 kgs from 1563.8339 kgs in March while Large scale producers' deliveries decreased by 14.1343 per cent to 859.4400 kgs from 1000.9122 kgs produced in March.

The statistics show that overall deliveries to Fidelity in April decreased by 3.24925 per cent to 2481.4112 Kgs from 2564.7461 kgs delivered in March.

During the first quarter of 2022 gold deliveries jumped 92 per cent to 7.695 tonnes from 4.016 tonnes in the comparable period of 2021.

The March 2022 gold output spiked 39 per cent to 2.564 tonnes from 1.8 tonnes achieved during the comparable period following the 5 per cent mining incentives put in place by the central bank.

Of the 7.695 tonnes delivered during the first quarter of 2022, small-scale miners delivered 4.949 tonnes against 2.746 tonnes from large-scale miners.



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The requirements for the management of tailings facilities in Zimbabwe



Aftermath of the Jagersfontein diamond mine tailings dam burst in Free State, South Africa.

On Sunday the 11th of September 2022 dozens of people were hospitalized, many reported missing and properties submerged or destroyed after a tailings dam of the mothballed Jagersfontein diamond mine burst in Free State, South Africa.

By Methembeni Moyo additional reporting by Keith Sungiso

It is still not unclear how many fatalities have resulted from the tragedy with the latest statement from Free State emergency services putting the number of confirmed deaths at one as a result of the dam burst. Jagersfontein Developments says it has made R20 million available "for affected people on the ground and the restoration of the town which is destroyed.

Sad scenes played on Social Media with some members of the community forced to "escape with only the clothes on their backs," the AFP news agency reported.

In 2019, there was a Brumadinho tailings dam disaster in Brazil, where a tailings facility collapsed releasing 11.7 million cubic metres of toxic mud and killing more than 200 people according to BBC reports, the management of tailings storage facilities, ("TSFs") has come under increasing international scrutiny.

The Investor Mining and Tailings Safety Initiative prompted by the Brumadinho disaster set in motion a global tailings review by the International Council on Mining and Metals (ICMM), the United Nations Environment Programme (UNEP) and the Principles for Responsible Investment (PRI), to ensure the adoption of global best practices on TSFs and to establish an international best standard.

Zimbabwe is no exception. Zimbabwean miners, especially primary miners, will be expected going forward to adhere to and implement international best practices and ensure that TSFs are managed in a way that will ensure the safety



of mine workers, communities, and the environment. Indeed, some of Zimbabwe's mines were part of the global tailings review carried out in 2019. Zimbabwe's mine safety and environmental management laws are not as sophisticated and up to date with international norms and standards with regards to TSF management as other jurisdictions. However, even within the current legal and regulatory framework, Zimbabwe's mine safety laws do provide for the management of TSFs and importantly also provide an opportunity for miners to implement their own rules which may be at par with international best practices.

In this article, we discuss the TSF safety and management requirements in terms of the Mining (Management and Safety) Regulations, Statutory Instruments 109 of 1990, (the “Mining Safety Regulations”) and the scope for mining companies to make their own TSF management rules that will pass international muster.

TSF management in terms of the Mining Safety Regulations

Section 25(1) of the Mine Safety Regulations requires that every TSF be constructed under the supervision of a competent person and in such a manner as not to endanger life or limb or to cause damage to property and be provided with an adequate penstock, spillway or some other suitable installation.

A competent person is described in section 1 as a person who has had adequate training and experience to enable him to perform the required duty or function without causing avoidable danger to himself or any other person. Section 25(2) requires a competent person to inspect a TSF every three days to ensure that there is no danger of breach or collapse.

Section 25(3) requires any foreseen possibilities of breach or collapse to be reported to the mine manager and appropriate action to minimize the effect of a potential breach or collapse to be taken immediately. All inspections and reports made with regards to the management of TSFs, in terms of section 25(4) are required to be recorded and countersigned for by an official of the mine every seven days. Sections 26 and 27 reiterate the requirement for TSFs to be properly designed, constructed, and maintained. These sections further require miners to make modifications, additions, or alterations to TSFs where necessary to ensure TSF structural

integrity and to take precautions against flooding.

Can miners do more?

In light of the growing global scrutiny of TSFs and the development of international best practices, what can Zimbabwean miners do to ensure that its mines are compliant with both local laws and international standards?

The Mining Safety Regulations allow for a mechanism whereby miners can make additional management and safety rules and ensure that those rules have the same force of law as the regulations themselves. Section 10(1) of the Mining Safety Regulations states that If a mine manager wishes special rules not inconsistent with the regulations, made by him for the maintenance of order and discipline and the prevention of accidents at such mine, to have the same force and effect as the regulations, the mine manager shall send such rules through an inspector or the Chief Government Mining Engineer who shall submit them to the Minister of Mines and Mining Development, (the “Minister”) for his approval.

Section 10(2) states that If the Minister approves the special rules submitted to him, the manager concerned shall be notified accordingly and the rules may then be posted up in a conspicuous place and shall take effect after they have been so posted up for fourteen clear days.

Sections 10(3) and 10(4) provide for the mechanism for the rejection by the Minister or the objection to the special rules by an interested party. In terms of section 10(5), when, and as long as, special rules made in terms of section 10 of the Mining Safety Regulations are posted up as required, they shall until they are revoked or altered by the Minister, have

the same force and effect as the Mining Safety Regulations and any person who contravenes or fails to comply with such rules shall be guilty of an offence and liable to the penalties specified in the Mining Safety Regulations. Accordingly, in terms of section 10 of the Mining Safety Regulations, miners have the option to make special rules with regards to the maintenance and monitoring of TSFs which will have the same force of law as the regulations. Should miners feel that the Mine Safety Regulations are inadequate, they may implement additional rules and further ensure that such rules have the legal force of regulations.

Conclusion

Notwithstanding that Zimbabwean mining safety laws are not regularly updated, the Mining Safety Regulations provide an opportunity for Zimbabwean miners, particularly those with significant TSF exposure, to make special rules with regards to the monitoring and maintenance of TSFs. Making special rules gives miners the peace of mind that employees will respect any additional rules with regards to TSF management with the same reverence as they would the regulations themselves. Secondly, by implementing special TSF management rules, should a TSF failure occur, the miner can show that it took every step necessary to be compliant and even went a step further by ensuring that international standards were used at the mine by implementing special rules that are as legally binding as the regulations. Ultimately, miners have to consider whether the cost and administrative drawbacks of further regulation by using the special rules mechanism is necessary to minimize the risk of a TSF failure occurring, and to mitigate the liability of the mine should a TSF failure occur.

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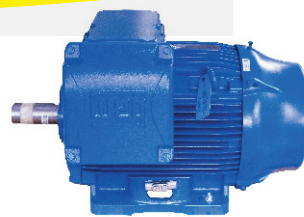
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60/40

THE ELEPHANT IN THE ROOM IS GROWING BY THE DAY

While the Mining industry races to reach annual revenue of US\$12 billion by the end of 2023, the 60% foreign currency retention for large-scale producers might be a major cause to upset the achievement of the vision.

Rudairo Mapuranga

The export retention scheme allows miners to retain 60 per cent of exported minerals in foreign currency while the remaining 40 per cent is surrendered to the country's central bank (the Reserve Bank of Zimbabwe 'RBZ') at the prevailing interbank rate. If the 60% is not utilised within four months, the central bank will confiscate another 25 per cent to take the total surrender requirement to 65 per cent.

Currently, the interbank exchange is

slightly above ZWL 500 per US\$1 while on the parallel market, US\$1 ranges between ZWL 1000 for soft currency and ZWL 800 for hard currency. With the above discrepancy between the formal exchange rate and the market rate, exporters are losing over 20 per cent of their real earnings due to the surrendered earnings.

Miners are also paying taxes and electricity in foreign currency, foreign exchange regulations are a punitive tax to business viability.

Government measures to reduce inflation

It should however be noted that despite miners losing a lot of their money due to the exchange rate alone, the government has been working flat out to make sure that inflation is managed well to avoid a

situation where miners lose.

Between 2015 and 2021, the country promulgated hundreds of statutory instruments (temporary measures) aligned to monetary policy and produced a plethora of exchange control regulations or statements in an effort to combat inflation.

Recently, the central Bank introduced gold coins which are meant to be a store of value for businesses, miners included.

The RBZ announced that 90 per cent of the 4475 gold coins sold as at 10 August 2022 were sold in local currency with the government realizing ZW\$3.7 billion from the sale of the coins.

According to RBZ governor Dr John Mangudya, the high demand for gold

coins will help the local currency gain in value and reduce inflation.



RBZ Governor John Mangudya

“As at 10 August 2022, 4475 gold coins had been sold realising ZW\$3.7 billion of which 90% was paid in local currency and the balance in foreign currency, and evenly distributed throughout the agents.

“The high demand for the gold coins will assist in mopping up liquidity from the market and thus strengthen the demand and enhance the value of the local currency. The Bank shall continue to release additional gold coins into the market on an ongoing basis in line with demand,” Mangudya said.

However, Although gold coins might be an alternative for miners to return the true value of their mining operations, the coins are not allowed to be sold before 180 days after their purchase making it difficult again for miners to have sufficient operational funds.

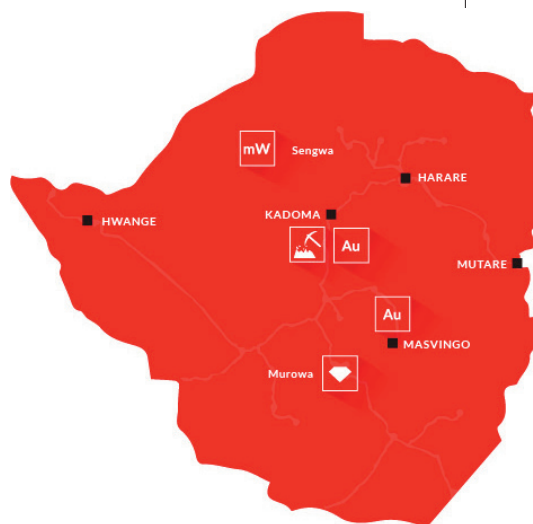
60/40 forex retention pressuring miners

The large-scale mining sector has been hard hit stubbornly by the cost of production, labour and materials due to the current foreign currency retention offered by the government experts say are not viable.

The large-scale producers are of the view that the current foreign currency retention which is at 60 per cent is an

elephant in the room which is impacting production significantly.

According to Freda Rebecca Managing Director Mr Eliakem Hove, the primary producers were pushing towards the government giving the miners 100 per cent so that operations may not be affected making them significant to achieve the government’s vision for the mining industry contributing US\$12 billion annual revenue.



RioZim Operations Map



He said that the 40 per cent Zimbabwean dollar component aids in the increasing cost of production.

“Our position as the Chamber as well as Freda Rebecca 60/40 is not adequate we would actually want 100 per cent, worst case 80/20. The Zim dollar component increases your cost currently sitting around 60 per cent when trading, 60/40 is putting pressure on our side,” he said last year.

In a trading update, Bindura Nickel Corporation secretary Conrad Mukanganga said the adverse impact of the cost of local inputs and the increasing disparity between the auction foreign exchange rate, at which the company surrenders 40 per cent of its revenue for Zimbabwe dollars, and the prevailing

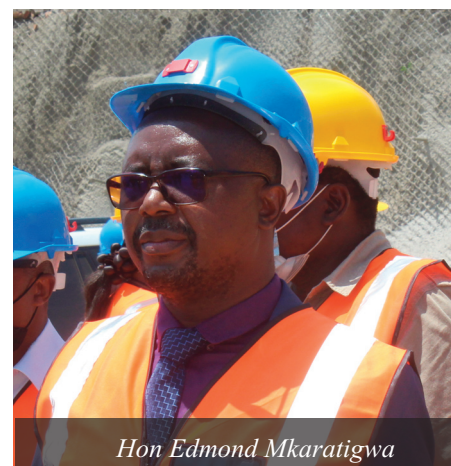
parallel market rate battered the mining company.

According to the Chairperson of the Geological Society of Zimbabwe Mr Kennedy Mtetwa operational costs in local currency are increasing due to high inflation on the parallel market and the failure by the central bank to provide all suppliers with the required foreign currency.

“Production costs going up in ZWL yet

exchange rate for 40% staying the same,” said Mtetwa.

Last year, diversified mining group RioZim during the first quarter of 2021 said it did not benefit from a 12 per cent increase in average gold prices due to the reduction of the gold foreign currency retention threshold from 70 to 60 per cent by the central bank.



Hon Edmond Mkaratigwa



The miner said the retention threshold impacted negatively on gold production by 10 per cent.

When asked what Parliament was doing to ensure the 60/40 issue was addressed, Portfolio Committee on Mines and Mining Development Chairman Hon Edmond Mkaratigwa said Parly was open to getting details of modalities that work but the sector has also largely not been forthcoming of late.

"Parliament has always remained open to getting details of modalities that work. If you remember well, we stated during the time the 60/40% was achieved that, we must continue to engage until we get to where we desire. The best way is to get some new position papers so that we have the basis that justifies the new demands so that we represent while fully equipped. Parliament has raised these issues but the sector has also largely not been forthcoming of late. We are ready to hear what our constituents have in mind and as part of what they think works best for them and the national interest, for the broader good of all today and in the future," Mkaratigwa said in an interview with Mining Zimbabwe.

Chamber of Mines President Collin Chibafa said the body will continue to

fight on for improvement of the retention threshold.

"We cannot afford to give up. The Chamber of Mines continues to engage and lobby the RBZ and Government for an optimal foreign exchange framework for the mining industry. While the retention has remained at 60/40, we have seen some changes namely, allowing miners to pay a proportion of the royalties and taxes in local currency and the introduction of an incremental export

incentive scheme that results in mining companies retaining 80% of export proceeds about a set threshold. In addition, for mining companies that are listed on the Victoria Falls Stock Exchange, the retention on incremental incentives is set at 100%. We will continue to engage and lobby for improved retention levels to ensure mining companies are able to sustain and expand their output," Chibafa said in an interview with Mining Zimbabwe.

It would be witless for primary producers to blame the authorities or vice versa if the country fails to attain the US\$12 billion industry by 2023 if the journey continues divergently.

We need mining equipment loans - Sophia Takuva

It is of importance for the government and non-governmental organizations who wish to fund women in mining projects to consider providing equipment as loans than cash, renowned miner Sophia Takuva said.

Speaking at this year's Zimbabwe Alternative Mining Indaba (ZAMI) Takuva said women Artisanal and Small Scale Miners (ASM) would be better off benefiting from equipment loans than cash because the money sometimes won't be enough or can be misused.

Takuva said that the current loans being offered by the Ministry of Women Affairs are a mockery to women miners as they are brummagem to improve mining projects.

"There are many conferences that we have attended and we have been told that women are failing to pay back loans. We asked them about the know-how of the women who are failing to pay back the loans and that information has never been revealed to us. When we go to their offices to apply for the loans, we are told that the loans are for SMEs but through news articles, they would have announced the loans as women in mining loans, apart from that the money that is unveiled from the loans is equivalent to US\$300 for a group of 10 women, which insignificant to fund mining projects. We have been engaging them saying that we want mining equipment and not loans because their loans will never grow mining projects. Their loans are taking too much time to be processed and the money would have eroded in value," Takuva said.

BNC to replace underground mining mobile equipment



Entrance to BNC

The country's largest Nickel producer, Bindura Nickel Corporation (BNC) is in the process of acquiring new underground mobile mining equipment to replace the current that it deems old and unreliable.

BNC Company Secretary Mr Conrad Mukanganga through the Trading Update for the period April to June said the company was complementing the current fleet by hiring equipment from different service providers.

"The acquisition of new underground mining mobile equipment to replace the old and unreliable units is underway. In addition, while awaiting delivery of new equipment, the Company is complementing the current fleet by hiring equipment from different service providers. Both the new and hired mobile equipment is expected to increase the availability of equipment and ultimately increase production," Mukanganga said.

In terms of performance for the Quarter Ended 30 June 2022 Mukanganga said, production increased by 13 per cent in terms of tonnes of ore mined while

tonnes milled increased by 16 per cent. He, however, said that Nickel sales during the quarter decreased by 14 per cent.

"Tonnes of ore mined for the quarter increased by 13% in comparison to the tonnes for the same period in the previous year mainly due to the delayed commissioning of the Re-deep Project attributable to unforeseen technical challenges. Ore head grade was 28% lower than the grade achieved in the same period last year, due to the declining massive strike length which led to a reduction in the volume of massive, coupled with constraints on the rate of development due to underground mining mobile equipment challenges.

"Tonnes ore milled increased by 16% in comparison to the corresponding period last year. This marks the transition to the low-grade high volume mining strategy which has been occasioned by declining massive volumes. Nickel in concentrate produced was 24% lower than for the same period last year, reflecting the lower grade of ore processed.

"The high cost of maintaining the ageing underground mining mobile equipment



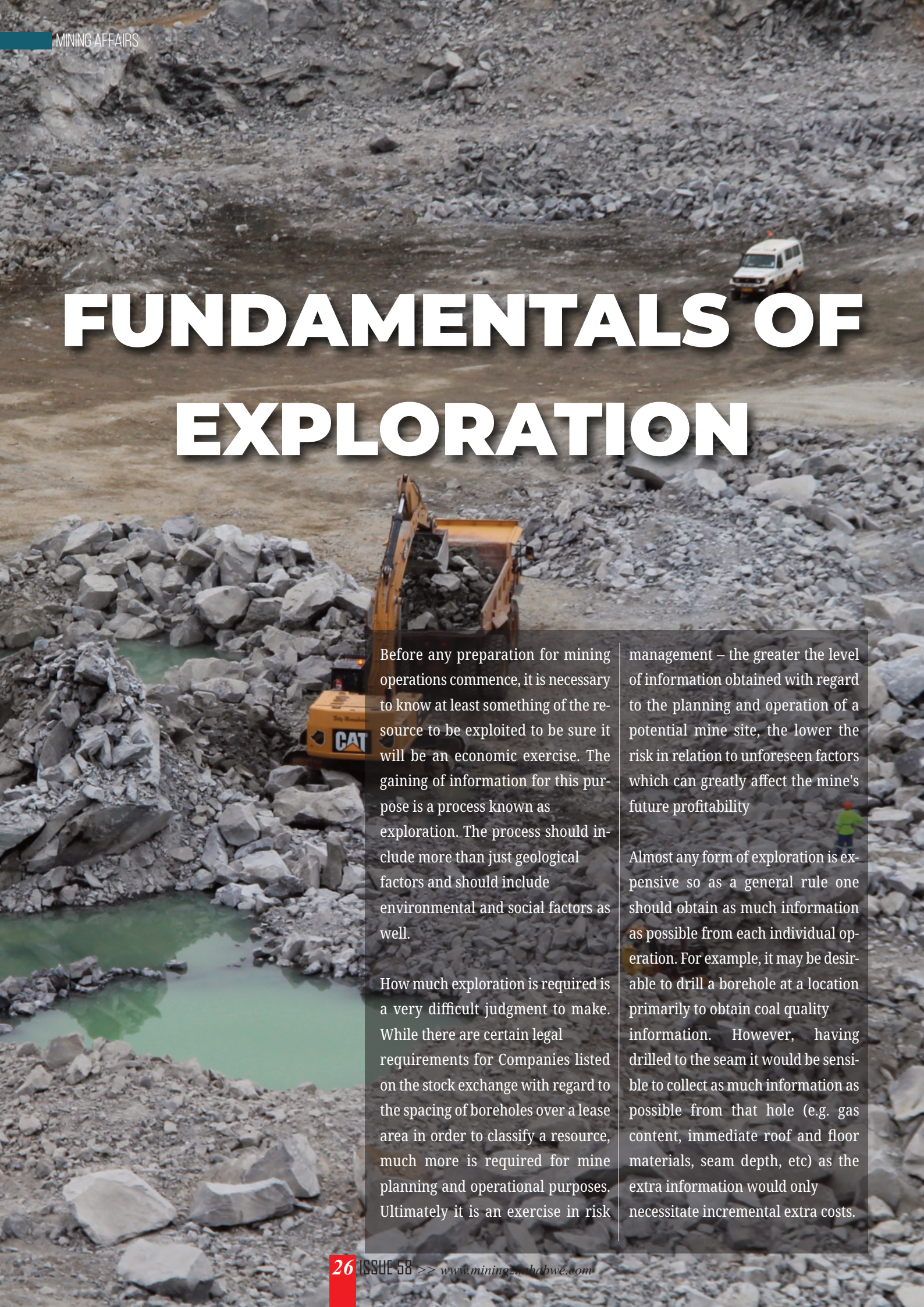
fleet as well as the increase in local operating costs, coupled with the lower nickel in concentrate production resulted in an increase in unit costs. The cash cost per tonne ("C1") for the quarter was 58% up on the cost for the same period in the prior year, while the all-in-sustaining cost per tonne ("C3") increased by 55%.

"The average London Metal Exchange ("LME") Nickel price of \$29,029 per tonne was 67% higher than the price of \$17,343 per tonne which was achieved in the comparative period in the previous year. The price improvement was attributable to the global high demand for Nickel.

"Nickel in concentrate sales for the period were 14% lower than for the same period last year. The sales decreased due to a delay in the renewal of the off-take agreement, which expired in early March 2022. A new two-year contract was signed in early April 2022 and export shipments resumed in the following month.

"As a result of the disproportionately high operating costs, the Company incurred a loss for the quarter," he said.

FUNDAMENTALS OF EXPLORATION



Before any preparation for mining operations commence, it is necessary to know at least something of the resource to be exploited to be sure it will be an economic exercise. The gaining of information for this purpose is a process known as exploration. The process should include more than just geological factors and should include environmental and social factors as well.

How much exploration is required is a very difficult judgment to make. While there are certain legal requirements for Companies listed on the stock exchange with regard to the spacing of boreholes over a lease area in order to classify a resource, much more is required for mine planning and operational purposes. Ultimately it is an exercise in risk

management – the greater the level of information obtained with regard to the planning and operation of a potential mine site, the lower the risk in relation to unforeseen factors which can greatly affect the mine's future profitability

Almost any form of exploration is expensive so as a general rule one should obtain as much information as possible from each individual operation. For example, it may be desirable to drill a borehole at a location primarily to obtain coal quality information. However, having drilled to the seam it would be sensible to collect as much information as possible from that hole (e.g. gas content, immediate roof and floor materials, seam depth, etc) as the extra information would only necessitate incremental extra costs.



Samples taken at a site where Lithium exploration is currently underway near Bindura

With most lease areas, something is likely to be known of the resource at the commencement of the project evaluation due to the conduct of earlier exploratory drilling by relevant government authorities. However, this information is frequently limited in nature and may only indicate that there is a resource of some sort present.

There is a wide range of exploration techniques available from very basic visual examination through to sophisticated geological processes, and a mixture of these is normally used.

A program could well follow a process as listed below, though the sequence may be a little different depending on time and resources available. There should be frequent reviews throughout, certainly, after each phase, to see if information gained requires changes to the future work plan or if it indicates that work should be postponed or even abandoned altogether.

The starting point of any exploration program would be a search of any publically available information related to the permit or lease area. This would particularly relate to drilling records or geological surveys but should also include such items as climate records,

land use and zoning, cultural or heritage reports. Historical records for the area may even be of use. Bore cores from old drilling programs may also be available for inspection.

Probably in conjunction with phase 1, enquiries should be made regarding the availability of private information which may be obtained (possibly purchased). Such information may be obtainable from sources such as local water bore drillers, farmers on outcrop areas, planning and statutory authorities and similar sources and may also be available from other mining or oil interests (who may have had aerial surveys of some type carried out). In particular, information should be sought from any neighbouring or nearby mines as this latter source of information, if available, is of great value as seam conditions generally only change gradually over distance.

Also possibly in conjunction with phases 1 and 2, a visual inspection of the surface topography should be carried out. This can be done from the air to some extent but at least a large portion should be on the ground and probably on foot.

Geological expertise is required on such exploration. Heritage/cultural expertise and botanical/zoological assessment will

also be required at some stage, but unless access is particularly difficult these can be included at a later stage in order to defer costs which may not be required if the project does not proceed. These latter assessments will probably be required at an early stage if drilling is to be carried out.

A review of the above phases will often result in parts of the permit or lease being removed from any future exploration because that part of the resource will not be economic or be subject to surface constraints (water courses, dams, heritage buildings, archaeological sites, bridges, national parks, etc). It may also identify where drilling or other types of surface based exploration may be restricted for similar reasons.

At this point a decision has to be taken as to whether or not to carry out additional surface (possibly aerial) surveys such as magnetometer surveys (comprising detection of changes in the Earth's magnetic field at a localized level which indicate changes in mineralogy or the presence of geological features) seismic surveys (comprising the detection of surface initiated sound vibrations as reflected by underground strata and structures). This may be beneficial to assist in designing the best drilling programme or it may be preferable to carry out drilling first to decide if such surveys are worthwhile.

THERE IS A WIDE RANGE OF EXPLORATION TECHNIQUES AVAILABLE FROM VERY BASIC VISUAL EXAMINATION THROUGH TO SOPHISTICATED GEOLOGICAL PROCESSES, AND A MIXTURE OF THESE IS NORMALLY USED.

At some stage, a drilling exploration program will almost certainly be required. This will most likely involve cross measure drilling from surface to seam. At least some, if not all of these holes will involve coring of a substantial length of the strata and certainly of the seam itself. A proportion of the holes should also involve drilling below the seam(s) likely to be worked at least to the lowest seam in the sequence or at least to a depth which may be affected by any goaf above. Apart from standard geological information regarding strata sequences and thicknesses and possible indications of structures, any borehole can be tested for:

- *Coal quality and washability*
- *Coal or rock strength and other properties*
- *Stress magnitude and direction*
- *Groundwater information*
- *Seam and surrounding strata gas content and composition.*

It is not worth paying for information which will be filed and never used, but having to drill another hole later to collect information not obtained initially

is very expensive. It is therefore usually worthwhile to maximize the information collected. Note that more than one core can be obtained from a single borehole, if required.

Usually, a drilling program will complete the exploration of a lease area, but it should be noted that not all the drilling may be done at the one time. It is only necessary initially to fully explore enough of the lease to ensure it is economic. Further exploration can be, and normally is, carried out after the mine has started, provided it is done in advance of the areas to be worked.

Some exploration may be carried out from underground once work sites are available, using in seam boreholes rather than drilling from surface. This has the advantages of reducing potential effects on surface areas and covering extensive distances in- seam and utilizing holes which have to be drilled for other purposes. However, it is more difficult to drill "cross measure holes" (holes which cut across layers of strata rather than follow them) ahead of the workings from underground if cross measure drilling is

required.

Because of the expense involved with boreholes the possible use of exploration holes for other purposes or vice versa should also be considered. Coal bed methane production is becoming more common, whether primarily for gas production or to remove gas prior to mining. If these holes can be used for exploration without compromising their use for gas drainage then savings can be obtained.

There is a tendency in recent times to run mine services (air, water, power cables, etc) in boreholes rather than in drifts or shafts - exploration holes could be used for this purpose if the required location can be decided before the exploration is carried out. It is unlikely that exploration boreholes will be able to be used for such purposes unless a decision is taken prior to completing the holes and the holes are lined rather than being filled with cement or similar to prevent them becoming a potential water inrush hazard if intersected by mine workings.



The need to fully formalise highlights at ZAMI 2022



The semi-precious stones guru - Privelage Moyo

The urgent need to fully formalize, regularize and professionalize the Artisanal and Small-Scale Mining (ASM) sector was a key takeaway at this year's edition of the Zimbabwe Alternative Mining Indaba (ZAMI) 2022.

Rudairo Mapuranga

Speaking at ZAMI 2022 in Bulawayo, Zimbabwe Miners Federation (ZMF) Midlands Provincial Chairperson Mr Makumba Nyenje said there was a need to speed up the formalization of the ASM sector by making sure that the miners are registered, sell commodities to official markets, adhere to Safety, Health and Environment protocols and pay necessary tax.

"For the ASM sector to fully formalize they need to get formally registered by the Ministry of Mines through proper pegging of mining claims they are working on. They need to adhere to all mining statutes of Zimbabwe. Obtain and implement EIA certificate provisions. Declare their produce to FGR and MMCZ for formal marketing and tax compliance purposes and also adhere to some proper mining standards and SHE protocol,"

Nyenje said.

Speaking to Mining Zimbabwe at ZAMI, Zimbabwe Diamond and Allied Workers Union (ZDAWU) Chairperson Mr Cosmas Sunguro said there was a need to look at the country's policy framework to fully formalise as some of the policies in place discourage miners to formalise.

"First is looking into the diamond policy such that it calls for acceptance or recognition of ASMs.

"There must be a framework that explains how the diamonds are to be extracted and marketed by ASMs.

"There must be an opening of the diamond sector to individuals or consortiums as opposed to it only being a public resource controlled by the



Cosmas Sunguro at Mining Indaba

government.

"Most importantly, consultations with all stakeholders to determine what needs to be done concerning the involvement of ASMs," Sunguro said.

He added saying that the formalization of the ASM in diamonds will come with many benefits which include among others:-

- "1. Issue of environmental conflicts is resolved. Those not rehabilitating the land will be easily identified and punished according to the laws of the land. We will be able to have a database of all artisanal diamond miners operating.
2. Community will benefit from the formal activities being undertaken. They will be able to carry out their normal duties without disturbances.
3. Illicit Financial Flows challenges can be abated. Fidelity can now visit the places and be able to get diamonds from the areas. The challenges of diamond buyers will be dealt with as these are the ones fanning IFFs.
4. Increase of income among locals as they become partakers in the diamond value chain.
5. Inclusive Participation of community members. We can even give allocations like youths, disabled and women can get 50% of all allocation of claims.
6. Issue of ownership of resources as enunciated in section 13 (4) will



Sophia Takuva

7. It is our greatest hope as ZIDAWU that eventually we will realise our wholesome freedoms that we are not fully enjoying due to the Protected Places and Areas Act

In her speech, Women in Mining member Sophia Takuva said there was a need to formalise the ASM by recognizing the youth in matters of development.

“There is a need to formalise this sector for development because truly many have achieved dreams through this sector. The violence in this sector can be finished by the government by empowering youth in the communities,

imparting them with knowledge and technical skills on how minerals in their localities are mined and also identifying mineral-rich areas and registering community mines through rural councils. The projects that will belong to communities will create employment for local youth and run at district levels, the profits and revenues from the minerals will develop the local community and the district,” Takuva said.

Zimbabwe Miners Federation (ZMF) Secretary for Semi Precious stones and Gemstones Mr Privelage Chinembiri Moyo said the Ministry of Mines and

Mining Development should work closely with local authorities as this will reduce land disputes.

He said women were facing challenges in getting mining claims while foreigners were coming to mine the country's resources illegally.

“Ministry of Mines should work closely with local authorities so that they can know those that have mining titles in their jurisdictions. Women are facing challenges in accessing economic opportunities such as acquiring mines and securing jobs at mines. Responsible mining and sourcing should be over-emphasized to minimise environmental damage, with accelerated mining come accelerated environmental damage, hence miners should be encouraged to mine responsibly. The government needs to loosen the noose around the neck of the gemstone sector. Currently, the law criminalises any person that sells gemstones.



Makumba Nyenje

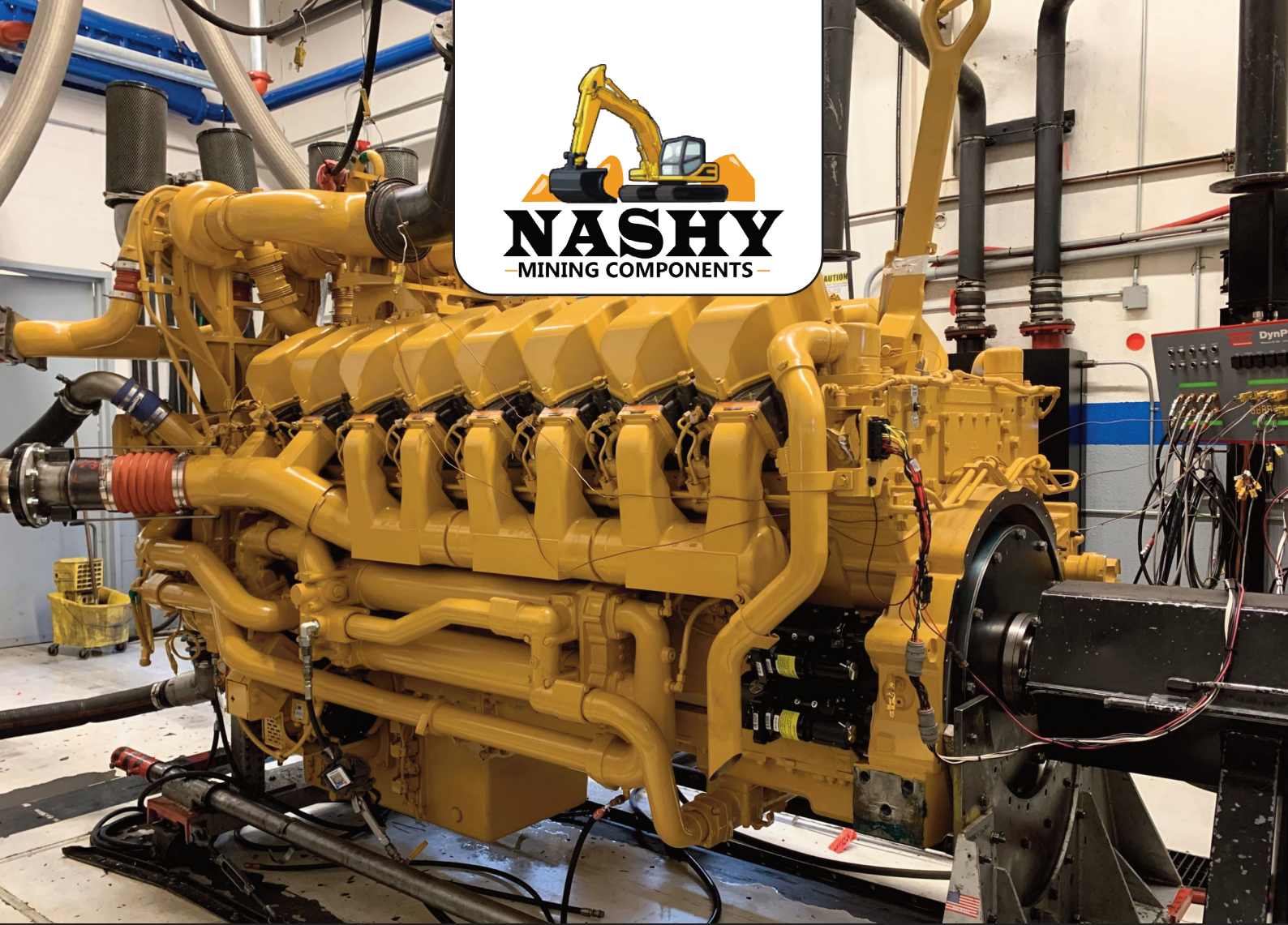


DRILLING

BLASTHOLE - BOREHOLE - RC - CORE DRILLING

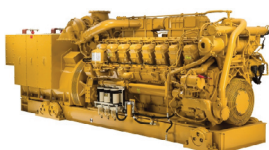
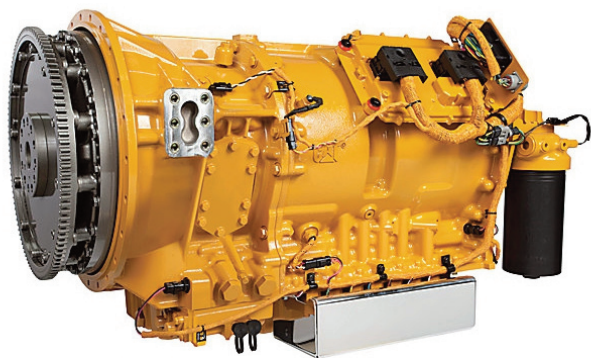
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