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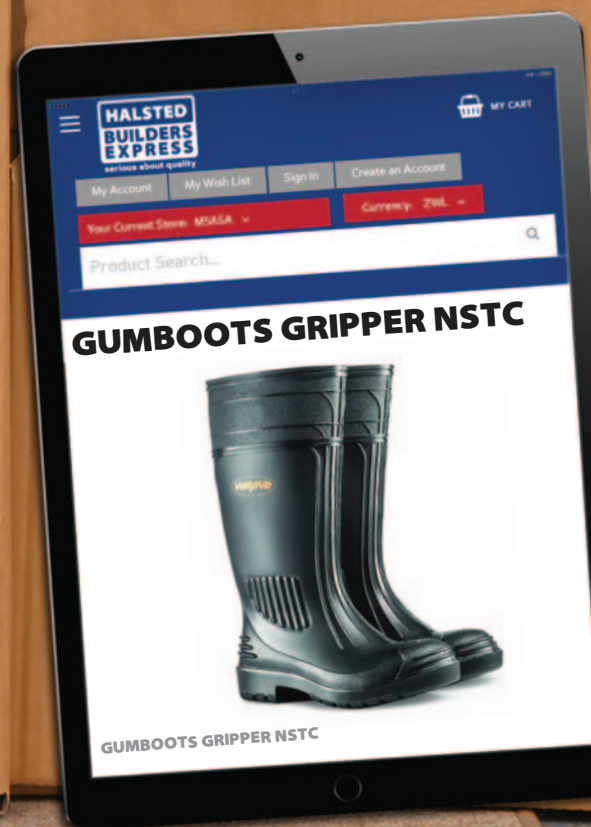
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Mining Zimbabwe is the premier source of Zimbabwe Mining News. Our core focus is the Zimbabwe Mining Industry, trends, new technologies being developed and used to improve this crucial sector, as well as new opportunities and investments arising from 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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# CONTENT

Mining Zimbabwe Magazine | October, 2021

## INSIDE MINING ZIMBABWE



**This month we feature Shamva mine after our visit for the Association of mine managers (AMMZ) Tour**

- 05** Shamva Mine to produce 400kg of gold monthly by 2023
- 10** Shamva Gold Mine to lead gold production for 33 years
- 12** IMAGES: Association Of Mine Managers of Zimbabwe Shamva Mine Tour
- 14** Association of Mine Managers of Zimbabwe Shamva mine visit
- 16** Muzabani oil and gas discovery advancing well
- 18** Zim "white gold" potential boosted as lithium is classified essential by the US
- 20** Cadastre system complete installation first quarter 2022
- 21** Prospect's Goromonzi mine initiate first lithium export from pilot plant



- 22** BEYOND FACADES: Rekindling The Fading Hope
- 24** ZMF Mashwest Executive on a fact-finding mission and solution inclined mining visits
- 26** Kadoma Miner initiate agro-mining Zimbabwe



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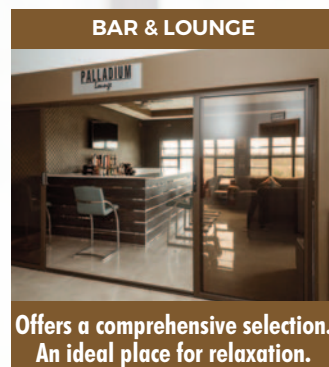
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The lodge's en-suite rooms are big and feature Wifi and DSTV.

The Platinum Restaurant, which seats a maximum of 15 diners at full capacity, is located within the lodge. The menu is varied, with a mix of local and international cuisines, and it is appropriate for both business and leisure travellers. The menu is varied, with influences from both local and international cuisines, and is appropriate for both business and leisure travellers.

The lodge has a well-kept garden that is secluded and ideal for hosting casual diners, team building activities, weddings, celebrations, or any other type of event. The Palladium bar, located on the first floor, offers a wide range of wines, cocktails, mocktails, and other beverages in a relaxing setting while watching one of the many sporting channels available.

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# Shamva Mine to produce 400kg of gold monthly by 2023

**In just two years, Shamva Gold mine is expected to start producing 400 kilograms of gold per month, a move described as key to the envisioned 12 billion the United States dollar mining industry.**

Vongai Mbara

The mine which resumed operations early last year has been surpassing its monthly targets of 30 000 tonnes of gold ore. As of July this year, the mine produced a record-breaking 48 000 tonnes of gold ore and the numbers are expected to grow.

This comes following an injection of fresh capital from its parent company, Kuvimba Mining House which will eventually rise to 180 million.

Speaking at the mine tour event that was held last week, Shamva Gold Mine manager Mr Alfred Chinyere said by 2023, the new operation will enable the mine to produce 400kg of gold per month.

"Currently, the mine is operating above the set target of 30 000 tonnes of gold ore and breaking records each month with 48 000 tonnes produced in July.

"Since November last year, we have been creating new records every month. This is possible because we have adequate resources. Our competent workforce is highly motivated, they get their salaries on time and production bonuses," he said.

The projected capital injection of USD 180 million will make Shamva one of the biggest gold mines in Zimbabwe.



*Eliakem Hove*

So far, the mine has resuscitated 800 jobs and has managed to drill on Shamva hill after a successful exploration.

"This is going to change the dynamics of the mine because we are starting to mine an open pit at a rate of 200 000 tonnes per month. The ore will be processed here and we are going to build a new processing plant which is going to treat underground ore and the open pit ore.

"We have finished the pre-feasibility stage. We now have an idea of what we want because the exploration results are done," said Mr Chinyere.

"We now know the resource and US\$180 million is being invested so that the process starts in January next year. At the moment Freda Rebecca Mine is producing 300kg and with Shamva Gold Mine producing 400kg, the province will become a major gold producer," he added.

Speaking in an interview, Kuvimba Mining House director Mr Eliakem Hove said the new investment in Shamva has transformed the district and national fortune within a short space of time.

"Our desire as Kuvimba Mining House is to grow Shamva which is now operating at a higher level than before. Our vision is to bring Shamva to 400 kg operations in about two years. The district is endowed with several assets which we are looking at and that will change the face of Shamva and Bindura. We are part of contributing to the provincial Gross Domestic Product (GDP). We are ranked second but soon we will be number one," said Hove.



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# Shamva Gold Mine to lead gold production for 33 years



**The US\$1.2 Million which was sunk for exploration and development of Kuvimba Mining House owned Shamva Gold Mine has significantly made the gold mine a significant player in the achievement of the US\$12 billion mining industry.**

Rudairo Mapuranga

According to the US\$12 Billion mining roadmap where the mining industry is expected to fetch an annual revenue of US\$12 billion, gold is expected to earn one-third of the total which is US\$4 billion annually.

Shamva Gold Mine is targeting to produce 400kg monthly with the current Shamva Hill project promising that the mine can even surpass the projected monthly target.

According to Shamva Gold Mine Manager Mr Alfred Chinyere, the mine was aggressively developing new ore bodies to increase the ore tonnage at the mine so that the mine is expanded to a 400kg mine in the next two years.

"Our evaluation drilling has gone well, remember when we reopened the mine, we were worried that the bottom section is gone, but with evaluation drilling we have opened the mine now, we got two new ore bodies which are similar in size with the current ore body.

"At the moment we are aggressively developing these new ore bodies, so typically we have 5 new ore bodies, this

amounts to a tonnage which is pushing to around 900 000 at 2.6 grams per tonne. Our belief is that we are able to expand this mine to where it is supposed to be," Chinyere said.

According to the Shamva Hill project, technical services Manager Brighton, Bumhira exploration, and modelling work of the mine shows that it has a lifespan as the biggest gold producer in the country for over 33 years.



*Brighton, Bumhira*

"You have heard that Shamva will turn into a 400kg producing mine, that is very true. Not far into the future, we are looking at this starting in the first quarter of 2023. The Shamva hill project started about a year ago September 2020. 1.2 million was sunk into exploration and we are happy to report that we got a minable resource.

"After exploration, we went for a pre-feasibility study, we are now on stage three which is the DFS. But everything from stage one to three is pointing to us having a 400kg open pit mine. Around February next year, we will start building our plant which will have to go through a crash program, we expect it to be done in



*Shamva Mine Manager Mr Alfred Chinyere*

around 12 months.

"In terms of the total resource after our exploration work and after our modelling it's about 85.44 million tonnes at a grade of 1.86, 5.11 million ounces. From 1908 up to now we have mined only 2.4 million ounces, we are going to be mining 5.11 million ounces going into the future. It is a huge resource that is why we are confident that we will be the biggest mine in the country for the next 33 years." Chinyere continued.

The Government of Zimbabwe launched the US\$12 Billion mining industry by 2023 in October 2019, as part of the broader macroeconomic initiatives.

The US\$12 billion mining industry by 2023 could represent a 344 per cent growth from the US\$2.7 billion registered in 2017. Traditionally Zimbabwe issues 2500 mining titles per annum but due to increased appetite to invest in mining, mining title applications have soared to about 15 000 per annum translating to a 500 per cent increase.

Zimbabwe is home to the world's third-biggest reserves of gold, platinum, diamond, chrome, iron ore, coal, lithium, and other minerals and a reinvigorated minerals sector would go a long way in fueling an economic turnaround.



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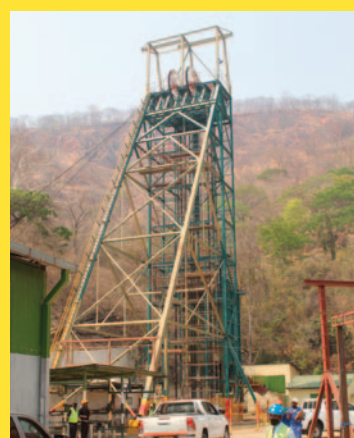


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DATE	DESCRIPTION	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE
01/09/21	DEV	1.00	1.00	1.00	1.00	1.00	1.00
02/09/21	STOP	1.00	1.00	1.00	1.00	1.00	1.00
03/09/21	TRAM	1.00	1.00	1.00	1.00	1.00	1.00
04/09/21	HOIST	1.00	1.00	1.00	1.00	1.00	1.00
05/09/21	MS	1.00	1.00	1.00	1.00	1.00	1.00
06/09/21	AG	1.00	1.00	1.00	1.00	1.00	1.00
07/09/21	MS	1.00	1.00	1.00	1.00	1.00	1.00
08/09/21	TOTAL	8.00	8.00	8.00	8.00	8.00	8.00



# Association of Mine Managers of Zimbabwe Shamva mine visit



*Ready to go down: AMMZ team 1 pose for a picture*

**On the 16th of September 2021, Mining Zimbabwe joined the Association of Mine Managers of Zimbabwe on a tour of Shamva mine.**

Running under the theme "Mining in the new Normal – Transforming Knowledge for Today and Tomorrow" the visit aims for mining managers and professionals to exchange information on challenges, experiences and goals which are key benefits of the networking event.

As he was welcoming the guests Freda Rebecca and Shamva mine Managing Director and one of the key figures in the Zimbabwe Mining Industry Mr Eliakem Hove said Shamva expected to have solutions that will take the mine operations further.

The technical visit had attendees going underground to level 9, visiting the hoist rooms, the famous "King Solomons mine", seeing work in progress and ore being hauled by underground trains.

Before the teams left for the underground Tour SHEQ Manager Mrs R Kamkazingeni briefed the delegates on the safety measures at the mine including the do's and don'ts and measures to take in case of emergency.



Our first stop was the hoist room on four-level where visitors were advised that the 300hp hoist carried 20 people at a go with a rope diameter of 29mm, length of 700metres and it went down 480 metres underground to 16 level.

We then proceeded to go underground to 9 level where we were introduced to

the sub-vertical rock hoist. The hoist was a 150 horsepower, with 2-tonne skip cages, 24mm sized rope, pg 10. One of the visitors queried if the mine has considered using a VSD drive system to which the Engineering manager said the mine is currently engaging consultants to investigate the upgrade.

Shamva mine manager Mr Alfred Chinyere then jumped in to say the mine will soon need to increase the hoisting capacity.

"We will outpace the capacity we have to take out the ore soon. We need to go back to the drawing to see how we can devise ways to take out more ore as we are currently drilling, finding new ore bodies and developing them," Chinyere said.

He was asked about the cost per tone as the mine goes deeper.

"How is your cost of mining per tonne profile chain changing as you go down. You are going to throw away some of them because of going above the cut off grade. It can be good grades but the cost of mining outways the advantages you are looking at in the current circumstance

Chinyere said, "Interestingly you would find the bottom section of the mine has got better grades. Currently, we are hovering around 2,7 grammes per tonne. When we are blending you find that the bottom section gives us over 3, sometimes over 4grammes per tonne. We believe the opening up and optimising of the bottom section will balance off everything,".

Eng Gwatidzo from Bulawayo Mining Company also asked progress of the mine since re-opening.

"When you resumed exploration what level in terms of the resources base, what did you unlock and where are you now?"

Gwatidzo asked.

To which the Technical services manager Mr B Bumhira responded saying, "In our resource estimate we had 12 million tonnes surface resource, we are now at 85 million tonnes. This 85 million tonnes came from a combination of drilling and resource modelling where we were fitting everything together," Bumhira concluded.

We visited the part of the mine where the famous "King Solomon mine" movie was shot.

At the bottom section, Mine Managers marvelled at parallelism drilling praising the two drillers for a job well done. Mine manager Alfred Chinyere promised to pay the drillers a bonus for the splendid craftsmanship.

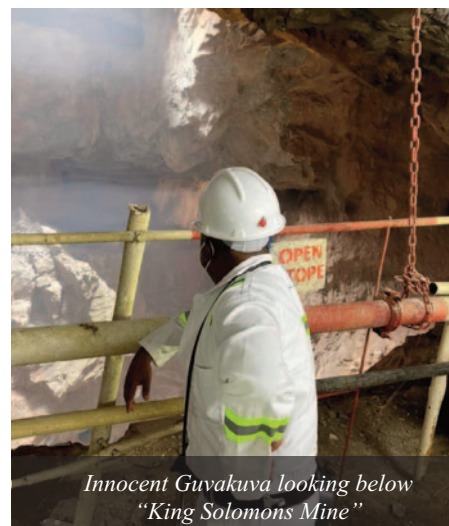
## Skills

Between Shamva and Freda Rebecca Kuvimba currently has 150 student attachees and 80 General technicians.

## Conclusion

So much was discussed and so many ideas were shared. The large scale miners are playing their role in working towards attaining the President's 12 billion dollar mining industry by 2023 and no doubt Shamva is one of the leading horses in the gold sector. Commenting on the visit ZCDC head of mining and AMMZ vice president Mr Innocent Guvakuva said the visit was a success.

"The visit was a success with a lot of insight into the current production and future Expansion Plans. A good investment has been put into the business including a new plant and an open pit.



*Innocent Guvakuva looking below "King Solomons Mine"*



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# Muzabani oil and gas discovery advancing well



**Australian Stock Exchange-listed oil and gas exploration junior, Invictus Energy Limited has revealed that the company's seismic data acquisition campaign in Muzarabani Mashonaland Central Province is advancing well.**

Rudairo Mapuranga

The Minister of Mines and Mining Development Hon Winston Chitando earlier this year said the country is in the process of becoming an oil producer with Invictus Energy moving towards drilling two wells early next year.

He said that by the end of April, Invictus Energy will drill wells in Muzarabani as a way of bringing oil or other hydrocarbons such as natural gas.

Invictus said the seismic data acquisition campaign was advancing well with Vibroseis units already in action. The units send vibrations into the ground and listening stations to measure the vibrations as they move into Earth, certain sounds reflect Oil reservoirs.

The generation and recording of seismic data. The acquisition involves many different receiver configurations, including laying geophones or seismometers on the surface of the Earth or seafloor, towing hydrophones behind a marine seismic vessel, suspending hydrophones vertically in the sea or placing geophones in a wellbore (as in a vertical seismic profile) to record the seismic signal.

A source, such as a vibrator unit, dynamite shot, or an air gun, generates acoustic or elastic vibrations that travel into the Earth, passes through strata with

different seismic responses and filtering effects, and return to the surface to be recorded as seismic data. Optimal acquisition varies according to local conditions and involves employing the appropriate source (both type and intensity), optimal configuration of receivers, and orientation of receiver lines concerning geological features. This ensures that the highest signal-to-noise ratio can be recorded, the resolution is appropriate, and extraneous effects such as airwaves, ground roll, multiples and diffraction can be minimized or distinguished, and removed through processing.

Invictus Energy, the parent firm of Geo-Associates that holds the Muzarabani grant, has registered significant progress in trying to establish if there are commercially viable reserves of oil and gas in Zimbabwe's Cabora Bassa Basin, the geological formation underlying the Muzarabani area.

French oil giant Mobil in the early 1990s did initial seismic surveys but decided not to follow up.

However, Invictus, using more modern data processing techniques, reprocessed the data gathered and found strong evidence that the underlying geological structures had the domes and traps that could indicate oil and gas in Muzarabani.

Exploratory wells are required to see if those domes and traps have indeed trapped the organic matter that decomposes to gas and oil, but before

that stage, it is necessary to map the underlying geology more precisely, and that is what Invictus is now going to do.

It is envisaged that any natural gas and quite a bit of any petroleum discovered in Muzarabani is more likely to be used within Zimbabwe.

Invictus Energy awarded Canadian firm Polaris Natural Resources the contract to undertake a seismic survey, a way of mapping geology through sub-surface vibrations.

Polaris intends to conduct, process, and interpret a minimum of kilometres of seismic lines to define the best site for the first well, Muzarabani-, as well as possible sites for future tests or production wells.

Invictus was shortlisted under the Best Independent Player in Africa – Leopard, for the Big Five Board Awards of 2021. The Big Five Board Awards are the longest standing awards for Africa's oil & gas industry. Awarded since 1996 and with over 150 recipients to date. The winners will be revealed at the Big Five Board Awards ceremony as the finale of the Africa E&P Summit.

The awards ceremony celebrates the best individuals and companies active in Africa's oil & gas sector. There are five award categories within the Big Five Board Awards and a special category for Africa's Oil Legend.

*Invictus was shortlisted under the Best Independent Player in Africa – Leopard, for the Big Five Board Awards*

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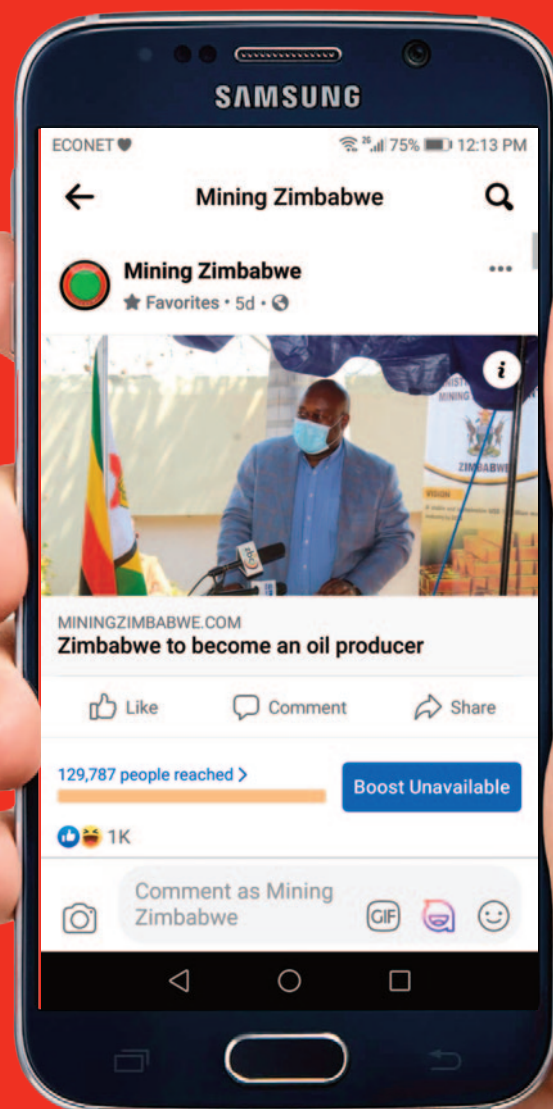
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# Zim “white gold” potential booming as lithium is classified essential by the US



***A new energy race is underway between the U.S. and China which echoes of past wars over oil. The countries are now fighting to procure new sources of lithium – the key to transitioning away from fossil fuels to clean energy, Florida-based technical analyst, market researcher, educator and trader, James Hyerczyk said.***

Anerudo Mapuranga

Zimbabwe, which is the world fifth-largest lithium producer for the past years from one mine, Bikita Minerals has the potential to peek to the top of the ladder if essential lithium projects currently underway prove to be world-class.

Several lithium projects are currently being developed in the country with Prospect Resources' Arcadia Project and Premier African Minerals' Zulu project soon to benefit from the lithium boom.

Sometimes referred to as “white gold”, lithium is an ingredient in lithium-ion batteries – the batteries that will power a projected renewable, clean-energy future.

Lithium batteries are the leading technology in electric vehicles (EVs), laptops, computers, mobile phones, pacemakers, hearing aids, drones, even remote-control toys... and so much more.

The U.S. military has been using lithium

batteries in radios, thermal imagers and other portable devices for over a decade. Over the next five years, the Department of Defense expects to expand the use of lithium batteries into military vehicles, ships, aircraft and missiles.

With the demand for lithium batteries skyrocketing, the U.S. government has officially classified lithium as essential and critical to our economic and national security.

The explosive growth in EVs, mobile phones, energy storage units for wind and solar energy, and other clean technologies, is a clear indication that lithium will be the hottest in-demand mineral for decades.

According to Hyerczyk, the leader in lithium raw material resources and lithium battery production could determine which country dominates economically and technologically in the 21st century. This means that Zimbabwe has a role to play in taking centre stage in producing lithium to achieve President Emmerson Dambudzo Mnangagwa's vision to see the country achieving an upper-middle-income economy by 2030.

Currently, Chinese chemical companies account for 80 per cent of the world's total output of raw materials for making

lithium batteries. China is rapidly buying up stakes in lithium mining operations in Australia and South America, Zimbabwe, therefore, needs to play through the rivalry to attract investment from else to benefit from the lithium war.

Late last year, the European Union was tipped by the European Raw Materials Alliance (ERMA), a partnership of over 300 companies, business associations and governments, to break Europe's dependence on imports from China and other resource-rich countries.

The EU reportedly imports around 98 per cent of rare earth from China. Turkey supplies 98 per cent of its borate, while Chile meets 78 per cent of Europe's lithium needs.

***Sometimes referred to as “white gold”, lithium is an ingredient in lithium-ion batteries – the batteries that will power a projected renewable, clean-energy future.***





*Prospect Managing Director Harry Greaves with Mines and Mining Development Minister Hon Winston Chitando*

South Africa provides 71 per cent of its platinum and Brazil supplies 85 per cent of the old continent's niobium, a crucial part of steel alloys used in jet engines, girders, and oil pipelines.

Political analysts interpreted ERMA's move as a way of trying to dismantle China from controlling the whole world market through identifying African countries like Zimbabwe that can be able to supply lithium and raw earth minerals to the rest of the world.

Zimbabwe has the potential to supply over 20 per cent of the world's lithium appetite 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 earth 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 out 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.

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

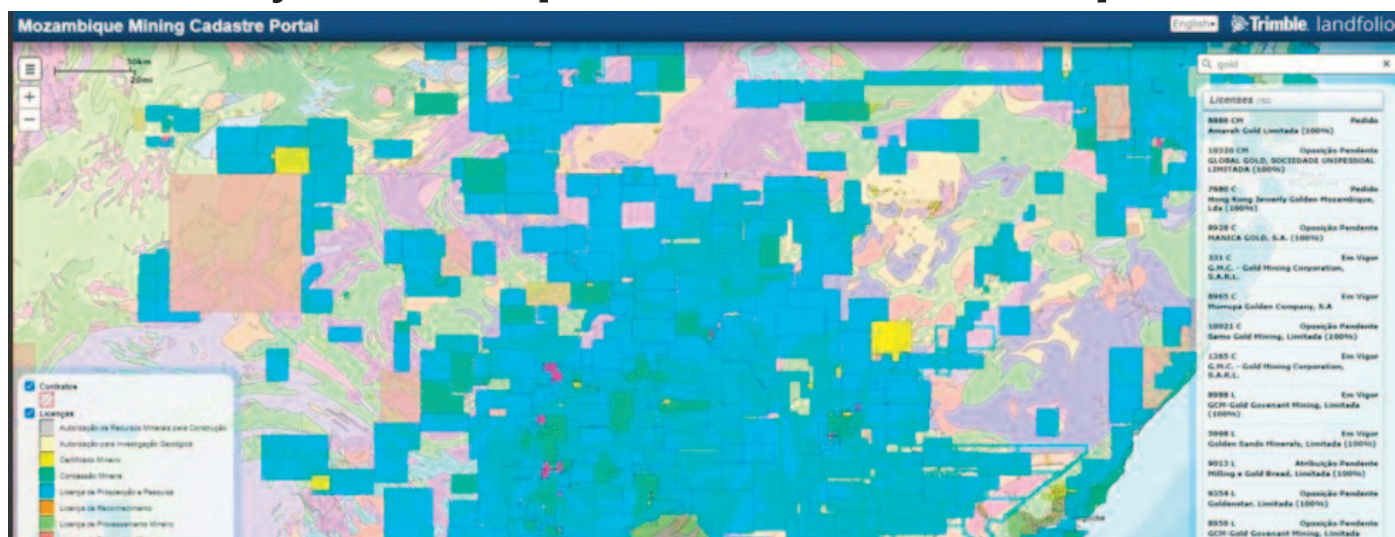
The country also boasts of MIRRORPLEX (Pvt) Limited's lithium project in Bindura which is postured to become Zimbabwe's biggest hard rock lithium resource that has the potential to grow into a world-class lithium mine, with Results from 240 Rock Chip samples taken from the exposed Bonnyvale pegmatite body at the Lithium Project providing high-grade lithium assay results up to 3.13% Li<sub>2</sub>O and surface sampling at the Loch Ness prospect has revealed two more pegmatites containing high Li<sub>2</sub>O grades up to 4.82% Li<sub>2</sub>O.

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



# Cadastre system complete installation first quarter 2022



The government through the Ministry of Mines and Mining Development is looking forward to fully implement the computerized mining cadastre system to resolve long-standing mining title disputes and buoy Zimbabwe's mining sector performance by the first quarter of 2022.

Rudairo Mapuranga

The government is optimistic that the mining sector has all it takes to elevate the economy of Zimbabwe to become an upper middle income by 2030. The Minister of Mines and Mining Development Hon Winston Chitando through the US\$12 Billion mining road-map, is optimistic that the mining industry has the potential to grow to become a US\$12 billion industry by 2023.

The cadastre system is seen as the missing link in spearheading the growth and development of the mining industry. According to the Deputy Minister of Mines and Mining Development Hon Polite Kambamura the government will implement the cadastre system early next year.

The government is keen to ensure the provision of equitable opportunities and an enabling business environment for both local, international and foreign direct investments. At the heart of such initiatives, the Ministry of Mines and Mining Development is playing a commendable role by introducing a simplification of procedures and the introduction of technology by deploying a Mining Cadastre Portal to bring investors one step closer to the mineral resources of the country of Zimbabwe.

"We are looking forward to installing the computerized cadastre system by the first

quarter of 2022." Deputy Minister Kambamura said.

According to Zimbabwe's largest gold producer, Freda Rebecca Mine Managing Director Mr Eliakem Hove the mining cadastre system is a seamless panacea to the prevailing mining disputes and ensures that data is kept safe and transparent (ELECTRONICALLY).

"Cadastral system enables you to fix in space geo-coordinates of a mining claim, it is electronically captured hence no one will be able to bring another coordinate within the same boundary perimeter, so it is a tool that will enable resolution of existing disputes as well as ensuring that the data is kept electronically," Freda Rebecca boss Mr Hove said.

The Mining Cadastre Portal provides an e-Government platform for all stakeholders in the mineral sector to engage directly with the mining commissioners who issue mining certificates. The Portal aims to ensure international standards of transparency with an emphasis on improving the ease of doing business in Zimbabwe.

The computerized cadastre Portal will be open for registrations for existing mineral titleholders who will have a period to verify and validate their individual mineral titles. Once verified, registered users will be able to view their portfolios and provide feedback on title data. Online applications and other portfolio management functionality will commence after the inauguration of the system.

Currently, the Ministry of Mines and Mining Development is flooded with several running disputes caused by over-pegging and double allocation of mining claims

which at times results in chaos in the sector.

The introduction of the new mapping system is therefore expected to bring sanity to Zimbabwe's mining sector, the Southern African country's single largest foreign currency earner, and spur growth through that economic segment.

Advantages of the cadastre system  
The computer-based cadastre system is expected to enhance transparency and accountability in the administration of mining titles.

The cadastre system will have all records of interest in the land such as licence holders' rights, restrictions and government activities.

The computerised mining register is also expected to be the central database for the storage of information on applications and licences.

It is also expected to reduce processing time for the issuance of mining titles and other mining services in line with best practices across the globe.

Currently, mining licence separations are marked on the ground by metal stakes, concrete beacons, or some other fixed points surveyed using conventional methods such as theodolite or archaic methods involving tape and chains. This method has been criticized for breeding corruption in the allocation of titles.

The cadastre system will therefore help curb corruption in the allocation of mining claims.

# Prospect's Goromonzi mine initiate first lithium export from pilot plant



Australian Stock Exchange-listed mining and exploration junior Prospect Resources has been shipped its first 25-tonne container of technical grade petalite concentrate from the Arcadia Pilot Plant to offtake partner Sibelco, the company Managing Director, Sam Hosack has said.

Rudairo Mapuranga

Prospect is seen as an integral part in the achievement of the President vision to see lithium revenue to US\$0.5 billion by 2023 subsequently leading the mining sector to become a US\$12 Billion industry by the same year.

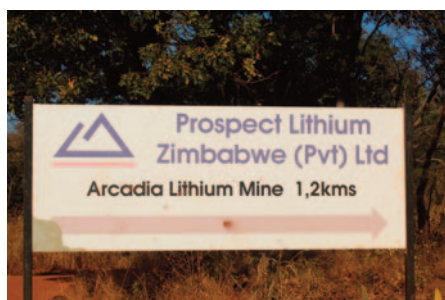
According to Hosack, the company through its first Pilot plant export is focused on showcasing Arcadia's petalite to new and existing markets.

The Pilot Plant results are consistent with previous lab-scale test work and confirm the amenability of the Arcadia Ore Reserves to the production of an ultra-low iron, technical grade petalite concentrate product containing >4.0% Li<sub>2</sub>O, <0.06% Fe<sub>2</sub>O<sub>3</sub> and <1.0% combined alkali (Na<sub>2</sub>O and K<sub>2</sub>O).

"I'm extremely pleased to announce that the Arcadia Pilot Plant has shipped on-spec technical grade petalite that is now making its way to Sibelco. With the plant now generating bulk volumes, the Prospect team are focused on showcasing Arcadia's petalite to both our potential partners and the largest customers in the global glass and ceramics markets."

"The final qualification gate we expect to pass will demonstrate to our stakeholders that Arcadia will provide a high quality, long life raw material source for both petalite and spodumene supply chains."

"I am also looking forward to announcing the results of the staged OFS in the next few weeks. With partner interest focused on faster ramp-up of the project, the team is also working hard with Lycopodium on the "direct to 2.4 Mtpa" case, which is due out later this calendar year," he said.



Prospect received a pilot plant purchase order from offtake partner Sibelco in May 2021 for up to 2,000 tonnes of technical grade petalite concentrate. The pricing in the purchase order represents an implied premium to the prevailing chemical-grade spodumene concentrate ("SC6") price of approximately 40%, at the time the order was struck.

While the price of technical grade petalite concentrate is typically linked to the price of technical grade lithium carbonate (for which it is a more direct substitute), this comparison to SC6 pricing highlights the significantly higher unit value of the

technical grade petalite concentrate product relative to SC6.

Prospect is also pleased to report that the updated staged Optimised Feasibility Study (OFS) is materially complete, with final quality assurance checks and Lycopodium sign off underway. Product pricing assumptions contained in the OFS rely on independent, third-party sources, with an implied premium for technical grade petalite concentrate of approximately 30 % over SC6 pricing.

***"I'm extremely pleased to announce that the Arcadia Pilot Plant has shipped on-spec technical grade petalite that is now making its way to Sibelco"***

## Details of the Pilot Plant

Prospect Resources undertook extensive metallurgical test work over the period 2017-2020 to optimize Dense Media Separation (DMS) recovery efficiency and product quality. A key outcome of the test-work supported a split DMS concept, in which coarse and fines fractions are treated separately using a two-stage DMS consisting of 'rougher' and 'cleaner' steps, with the coarse fraction targeted at producing technical grade petalite product, and the fines fraction producing a chemical-grade petalite product. The Arcadia Pilot Plant design embraced the technical study outcomes and implemented a 2-stage crushing plant and a single DMS stage capable of producing technical grade petalite product. A coarse fraction of size envelope 5mm x 1.7mm was selected as the optimum crush size for recovery of technical grade petalite product. The pilot plant can also be repurposed to process the fines fraction (<1.7mm) and produce chemical-grade petalite product.

The pilot plant first ore feed came from the blasted section of the Main Pegmatite (MP) orebody, which constitutes >16% of the total Arcadia Ore Reserves and more than 31% of the first 5 years ore supply (based on the 2.4 Mtpa case).

# BEYOND FACADES: Rekindling The Fading Hope



by Edmond Mkaratigwa & Albert Maipisi

It is the plight of the worker. The hope of mankind is to be socially and economically self-sustainable. One such road to self-reliance is employment and what happens when the employment is over in some instances, is to a lesser extent controllable due to many conditionalities. Zimbabwe is living the vision and process of creating many more jobs. Over the years, both Keynesians and the followers of Adam Smith including Milton Friedman, have directly and indirectly grappled with matters of worker welfare and profits. Mining firms usually for their operational conveniences, build staff accommodation close to mining sites. Subsequently, this reduces the worker's burden, while enhancing productivity. Staff accommodation is therefore predominantly taken as part of the employee benefits, and a tool for worker motivation. To this are added medical and education benefits for the families of workers. When all is going on well, that is the reality, yet when odds change, another reality beckons. In addition to housing and medical insurance support, relatively moderate salaries and other dependents' welfare systems, are part of the broader mining employees' packages.

Due to the nature of benefits dominantly derived from working in thriving mines, most of the lower-level workers wholly commits to the sector's employ. Many in that class are neither meaningfully developing themselves further nor do they expand their livelihood options as cushion against any future lean seasons, due to many reasons. Now, the unexpected has also been happening in the sector as is common with most businesses. These legal personas close business for good, stop mining for a while, restructure the business model and can be put under judicial management processes.

Implementation of such decisions has not always been a smooth process. Sometimes it takes time, while it is also abrupt in other instances. Whatsoever the case maybe, when these companies close, they usually do so with the promise to re-open and even where they are placed under judicial management, the same hope prevails.

Companies under judicial management are usually funded through government finances. The challenge has however been that, these funds further provide salaries to the company's management. Hence, a new lease of employment to them. Whether companies put under judicial management have been successfully resuscitated is a matter of further analysis and debate for another day. What is key to note is, government usually desires to resuscitate companies to save people's jobs and to ensure sustainability of the socio-economic strategic aspects of these entities. Nevertheless, results of such efforts are also mostly not cascading downstream to lower-level workers and in some instances, the whole process is suggestive of flogging a dead horse.

Many other challenges are experienced by the majority of lower-level workers where a company halts or scales down operations.

As this category of labour continues to reside in company accommodation, sometimes the companies are disposing the houses to the market while they are still occupied. That is usually done without formally consulting or advising these employees and without serving notices for evacuation. These vulnerable workers end up more desperate, with even more weakened livelihood resilience and psychologically traumatized. Children in school are forced to transfer and, in many instances, outstanding payments from the employer to the worker, remain unsettled for long. The worker is continually becoming the main victim and that paints a negative view of prospective investors in the eyes of witnesses of the victimization.

High expectation lingers among workers who are normally represented by their respective workers committees and particularly because they of the hope that they will have shared their challenges with different leaders in their contexts. These workers always live under expectation for a soon coming solution. Letters are written to various offices; seeking political and judicial solutions and neither is an easy route. Government would usually have facilitated economic and administrative remedies in the manner of judicial management or managed liquidation. There is therefore need to rethink the current such models, towards resuscitating these companies and basically, remain cognizant of need to balance between organizational sustainability and worker recompense. On the other hand, current private and public sector approaches appear to be failing. In fact, some of the victim employees' time of stay in company houses while awaiting settlement of sums owed them, is calculated as cost (rent) to the occupant who in this case will be the worker or his/her dependents.

*Continued on next page>*





After losing a job in the mining sector, sometimes it can be very difficult to secure another one. The glamour of getting a job in a big mining company can also fade where those circumstances are experienced. Mineral

exploitation by its nature is done for a limited tenure as minerals in any particular area will certainly become extinct. Some of the houses will no longer have essential services such as electricity and water also, because the workers might have failed to pay for the services and ultimately, they get disconnected, creating another water and sanitation hazard to the already exposed poor. Other houses end up being used as brothels for the survival of those idle workers while drugs are in addition exchanging hands for a livelihood. Different forms of abuse become rampant and indeed, there should be a solution and some kind of further innovation in that respect, as failure impacts negatively on the national and global advances for human development.

One of the key questions arising from this discussion is around who the major beneficiaries of companies being resuscitated by government is? This question arises predominantly because evidence of the resuscitation exercises is to a greater extent practically elusive. The second one is, since government is more interested in the welfare

of society including that of the disenfranchised masses, as well as the sustainability of business, is it not possible to come up with a new model that takes care of the plight of mine workers shed-out from employment in times of company closure or scaling down? The third and last question is, when mine assets such as the houses are disposed-of, why are the casualties of such a decision not given the first right of refusal? These questions are teasers for policy solutions whose answers are awaited, as well as for ringfencing key stakeholders' interests in the context of

new and old mines being opened and reopened in the country respectively, appreciating the central role of job creation in any and particularly in the national economy.

**[Ph.D. Candidate of Energy, Innovation and Sustainable Technologies and Chairperson of the Parliamentary Portfolio Committee on Mines and Mining Development & 2Ph.D. in Disaster Management and Public Administration. Published ideas are entirely views of authors and cannot be attributed to their current positions].**

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## ZMF Mashwest Executive on a fact-finding mission and solution inclined mining visits

Zimbabwe Miners Federation (ZMF) Mashonaland West Provincial chairperson Mr Timothy Chizuzu praised the small-scale miners in Kadoma for showing dedication to the growth and development of artisanal and small-scale mining.

Rudairo Mapuranga

In an interview with Mining Zimbabwe after the ZMF Mashonaland West Executive fact-finding mission and solution inclined mining visits to see the growth and development of small scale mining in the province the initiative which was pioneered will see the executive led by

Mr Timothy Chizuzu (chairperson), Mr Johannes Sithole (Treasury) and Ms Gladys Hwami visiting mines across the province in order to establish an acceptable and standard small scale miner in Zimbabwe. Chizuzu expressed excitement over the performance of small scale miners in Kadoma stating that their work shows that small scale mining is the future of Zimbabwe.

Chizuzu called for the proper structuring, monitoring and regulation of small-scale mining saying it has proven to have the potential to emancipate many people from poverty.



He said it was important to bring together academics, industry players and students to brainstorm on illegalities associated with the mining of gold and other minerals and how technologies could be used to control such activities.

"I'm happy we have managed to visit some of the small-scale mines in Kadoma Mashonaland West Province, I'm really impressed with how they are doing their work and I have seen that as small-scale miners we have a future," Chizuzu said.

Speaking to Mining Zimbabwe earlier this year, RioZim Chief Geologist Mr Patrick Takaedza said the country was not supposed to entirely depend on micro mining as artisanal miners are not capable of mining deep with low-grade mining being of significant challenge to them.

He said that many small-scale miners would not afford exploration leading their mining activities to be unsustainable.





"Exploration is a very expensive and risky business which the small-scale miners have no capacity to undertake. The big companies who have that capacity will not invest in 10ha size claims for the simple fact that such a small area will never hold significant resource to recoup investment or produce for a couple of years"

"Recent thrust in exploration is to find deposits that are subsurface without any surface expression which the small-scale miner has no capacity to find".

"Exploration diamond drilling costs approximately US\$100 per metre. This means that EPOs focus on long term sustainability of the mining industry while small scale miners are just focused on near-surface, less than 100m reefs which sooner or later will get depleted and exhausted"

"Production will need to be replaced by deeper reefs or much lower-grade deposits and neither of these is attractive to the small scale. Artisanals will never sustain the mining industry because of these two simple facts. They can't mine deep and they can't mine lower grades" Takaedza said.



However, Chizuzu said miners in Kadoma have proven that small scale miners can really sustain the economy of Zimbabwe because some are beginning to mine low grades and affording to mine over 50 tonnes of gold ore a day.

"Some of the small-scale miners are mining as low as one gram per tonne because they are pushing volumes, some are mining up to 4000 tonnes. My appeal to government and other stakeholders is that we need to support the sector so that it benefits much to the economy of Zimbabwe" Chizuzu said.



# Kadoma Miner initiate agro-mining



Water from mine dewatering at Queensdale mine in Kadoma owned by Mr Spencer Tshuma is being put to good use instead of being pumped from the ground and wasted away onto the surface.

Rudairo Mapuranga

The water from the mine which is currently producing over 1000 tonnes of gold ore every month is sustaining a local farmer. When Mining Zimbabwe visited the mine last month, the farmer was utilizing almost six hectares irrigating the land from the water from the Queensdale mine.



According to Tshuma, the initiative to “donate” water to the farmer was as a way to solve the mine’s problem of where to dump its water from mine dewatering and the farmer’s shortage of irrigation water. The farmer last month had two hectares of maize and two hectares of tomatoes and watermelons.

“We saw that the water we were pumping from our mines was going to waste away that’s why we decided to use it for agricultural purposes,” he said.

Tshuma said that his vision to support agriculture started from his belief to see the money being earned from mining transformed or loaned for agriculture purposes for the resuscitation of the country’s economy to the yesteryear’s Bread Basket of Africa.

“I have realized that mining has all it takes to transform the economy to an upper middle income, the first to transform the economy is by mining which in turn helps the growth of agriculture sector which I’m actually doing,” he said.

Pumping water from the ground and wasting it away onto the surface is a very common practice among the small scale and artisanal miners except a few Like Mr Tshuma.

In Norton, one Mr Fletcher Mbizo has been assisting ZRP Norton with the much-needed water which created an open door for others who are presently engaging in Horticulture at the site.

With the water challenges some town



councils are facing other than just wasting the water away, small-scale miners can bottle this water for sale in retail outlets. If more and more of them engage in this practice bottled water will flood the market leading to reduced prices.

Instead of the small-scale miners bottling the water, they can also sell to bottling water companies too.

“Normally water found in mine shafts is regarded as a major problem to handle by artisanal and small-scale miners as it requires expensive pumping equipment which they would rather avoid to buy if they could. However, this could change if the pumped-out water is regarded as one of the products of mining and is exploited for agricultural production. If the water is provided to local farmers within the vicinity of a mine, a new concept of “Agromining” could be developed and may lead to the mitigation of climate-change-induced droughts and hence greater agricultural production around mines. This will result in the reduction of farmer-miner conflicts that occur quite frequently around the country” said Legendary miner Engineer Chris Murove.

Norton miners association chairman Mr. Previlage Moyo said “Value addition is a very good idea”

“It is a business opportunity that has the potential to bring us added revenue rather than just waste the water away. When we pump water from the ground and onto the surface it just goes to the next miner and the next and the next so preserving it

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