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SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

ROCK *talk*

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PRESIDENT'S CORNER

Dear SANIRE member,

I hope this newsletter finds you well and informed about the recent developments within the South African mining industry and SANIRE. The past three months have been eventful, and we are excited to share some highlights with you.

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- President's Corner
- SANIRE AGM
- SANIRE Annual Awards
- SANIRE Branches
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- SANIRE RockStar

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PRESIDENT'S CORNER

Successful Events: We have recently concluded several successful events that brought together the mining community. These include the SAIMM AGM, SANIRE Bosberaad and AGM, Mine Manager's Association Banquet, EBB Meeting and Golf Day (credit to Gunther and his team for a job well done), as well as the Northern Cape Branch Meeting (well done Billy and team), Gauteng Branch Meeting (well done Ross and team), WBB (well done Hlomani and team) and FreeVaal (well done Louis and team). These gatherings provide a valuable platform for networking, knowledge sharing, and strengthening our community.

New SANIRE Council: The new council members were introduced at the AGM in August 2023. The current SANIRE Council represents diverse backgrounds, including Open Pit, Massive Mining, Tabular Hard Rock, Coal, Tertiary Institutions, the Minerals Council, and Consulting. This diversity ensures a well-rounded perspective and collective expertise.

ECSA Code of Practice: ECSA has recently published their proposed Code of Practice for Mining Engineering Work, including Rock Engineering. This proposal has sparked discussion within our community as it suggests that only mining engineers with a first degree in mining engineering may be eligible to register as Pr. Eng. and sign off on designs. SANIRE has officially responded to ECSA, expressing our concerns and offering alternative solutions to address this issue. We eagerly await their feedback.

Draft Chapter 2 Regulations: The Draft Chapter 2 Regulations on Appointments, Duties, and Responsibilities has been circulated for stakeholder comments. SANIRE, in collaboration with the Minerals Council's RETC, has submitted comments through its chairman, Mr. Riaan Carstens.

SANIRE Vote of Thanks: We would like to extend our gratitude to the following individuals and groups:

1. Immediate Past President, Ms. Lizelle Prinsloo, for her outstanding leadership over the past two years.
2. Our dedicated members who consistently support SANIRE by attending events and workshops. Your presence is greatly appreciated.
3. Keynote speakers, authors of technical papers, and symposium attendees for contributing to our knowledge and growth.

On a personal note, I am humbled to share that I will complete 29 years in the Rock Engineering field at the end of this year. This journey would not have been possible without the support and mentorship of remarkable individuals, including my family (parents, brothers, sisters, my wife Gaynor and our children Mathieu (15), Khloe (9) and Diego (6)), and mentors like Mr. Johan Oelofse (working under Johan's leadership, I managed to obtain both the Strata Control Certificate and Certificate in Rock Mechanics in 1996), Dr. Andy Haile (who introduced me to advanced inelastic numerical modelling tools), Mr. Phil Piper (from whom I gained practical knowledge on business administration and management), and countless others. I am grateful for the opportunities to learn from all my colleagues.

We look forward to the exciting developments and challenges ahead in the mining industry and the continued growth of our community.

SANIRE greetings,

Kevin Le Bron
SANIRE President 2023 – 2025)





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Fabchem Mining (Pty) Ltd. specialises in support technology that is at the core of making underground mining safer, especially at the great depths of South African mines. Fabchem is a leading manufacturer and supplier of strata control products and solutions to both the mining and civil industries.

Fabchem offers a total support solution, from drilling the hole for the tendon, to installation, pre-stressing, grouting and post installation integrity testing. As a technology leader, Fabchem holds several patents over some very innovative products. Fabchem is a Black Empowered company (52.6% black owned) and qualifies as a level 1 B-BBEE contributor.



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Nyandano	Netshivhazwaulu	Nyandano.netshivhazwaulu@seritiza.com	Coal Fields

SANIRE VISION, MISSION, & VALUES

Vision

To actively promote the South African rock engineering profession.

Values

- Honesty
- Integrity
- Professionalism
- Accountability
- Transparency

SANIRE ANNUAL GENERAL MEETING

The SANIRE annual general meeting was held on the 31st of August 2023 at Kloofzicht Lodge, Muldersdrift, the event was coupled with the annual awards ceremony which provided a platform for the sharing and discussion of SANIRE affairs as well as the presentation of awards to the so deserving individuals.



SANIRE ANNUAL GENERAL MEETING



SANIRE ANNUAL GENERAL MEETING



SANIRE ANNUAL AWARDS CEREMONY

The nominated recipients for the awards were voted for by council, with the winners announced at the AGM. Please join me in congratulating the award winners for their prestigious achievements in the various categories as outlined below:

Phil Piper

Honorary Fellowship Lifetime Achievement Award – Presented to the individual who has made a lasting technical contribution to the field of Rock mechanics and who has been instrumental in the implementation of new Rock Mechanics knowledge and techniques.

Erenst Du Toit

Practitioner's Award – Presented to the practicing Rock Engineer who has made a sustained practical contribution in the workplace.

Fikile Marvin Mokgethoa

Rockstar Award – Presented to the “up and coming” Rock Engineer who is being acknowledged for the valuable work they have been doing in their operations to improve systems, technology and mining practices.



Recipients of the Honorary Fellowship (obo Phil Piper), Practitioner's (obo Erenst Du Toit) and Rockstar (obo Marvin Mokgethoa) Awards

Dr. Richard Masethe for his paper titled, “Investigation of the source mechanisms of mining induced seismic events at Kloof Gold Mine”

Salamon Award – Awarded to the South African individual with the best technical publication in the preceding year.

Ruan Els for his paper titled, “Calibration of the limit equilibrium pillar failure model using physical models”

Ortlepp Award – Awarded to the Young South African individual with the best technical publication in the preceding year.

Cassius Selai for his paper titled, “The Geotechnical Design of the Highwall Mining Layout: A case study at the 5-seam operation of Glencore Coal SA”

Dick Stacey Award – Presented to the individual with the most outstanding master’s thesis or dissertation in the field of Rock Engineering



Recipients of the Dick Stacey (obo Cassius Selai), Salamon (Dr. Richard Masethe) and Ortlepp (obo Ruan Els) Awards

Franz Bruwer

Special Award - For having passed the exams in all RMC categories (Coal, Metalliferous hard rock, Massive and Open pit)

Groundwork Consulting

Lelanie Prinsloo Technological Innovation Award – Awarded to the SANIRE affiliated individual or company that has made a significant contribution towards innovation, new research or new development in the Rock Engineering Practitioner.

Open House Management Solutions

Sponsorship Award – Presented to the SANIRE affiliated organization that has participated and shown the most support in SANIRE events.



Recipients of the Lelanie Prinsloo (Groundwork Consulting), Special (obo Franz Bruwer) and Sponsorship (OHMS) Awards



Recipients of the RMC Examinations and Tertiary student's top achiever awards

RMC Certificate Examinations Top Achievers

Paper	Name	Surname	Result
SCO Met	Patience	Ratshalingwa	79%
Paper 1	Tshegofatso	Rampedi	82%
Paper 2	Lindokuhle	Zungu	80%
Paper 3.1	Modishe	Tswaane	71%
Paper 3.2	Sindiswa	Dlamini	74%
Paper 3.4	Asivhanga	Malovhele	80%

Tertiary Students Top Achievers

Institution	Best Rock Engineering Student	Student's Average
University of Pretoria	Glen Matlala	71%
University of Johannesburg	Boitshepo Montoedi	75%
University of the Witwatersrand	Tapiwa Marinda	84%

RMC Certificate Recipients (11-2022 to 05-2023)

Name	Surname	Company	Type
Wynand	Van Wyk	Thungela Resources	Coal
Easavani	Wessels	Two Rivers Platinum	Hard Rock
Mashudu	Ramathaga	Implats	Hard Rock
Jonanthan	Jakata	Implats	Hard Rock
Abraham	Bentile	Angloplats	Hard Rock
Mamokete	Mokoena	Wolverkranks	Coal
Munyaradzi	Musembwa	Zimplats	Met
Hlomani	Mthombeni	Sibanye Stillwater	Met
Johannes	Labuschagne	Royal Bafokeng	Met
Franz	Bruwer	AngloAmerican	Massive
Thlogelo	Mametja	AngloAmerican	Open Pit
Senzo	Ngwenya	Dwarsrivier Chrome Mine	Hard Rock
Godfrey	Sethlare	Northam Platinum	Hard Rock
Nkgatsana	Baloyi	Glencore	Hard Rock
Tinmukelani	Mlondobozi	Implats	Hard Rock
Tiisetso	Dikgang	Sibanye Stillwater	Hard Rock

SANIRE BRANCHES

NORTHERN CAPE BRANCH MEETING

On the 14th of September the SANIRE Northern Cape branch hosted their branch quarterly meeting at Namakwari Lodge in Kathu. The meeting was a success as it was attended by delegates from across the province. The event had a great turnout compared to the previous meeting, this shows a growth in the Branch and the dedication to attending branch events. On the agenda were four supplier presentations, one exam preparation presentation, one technical presentation and recognition of awards received for top achievers from SANIRE.

The meeting started with a warm welcome and FOG stats by the branch chairperson (Billy Mashiatshiti) followed by presentations. The supplier's presentations were delivered by:

- Ikaneng Moses Marungwana from SkyGeo on InSAR Monitoring solutions;
- Nihan de Jager from Groundwork on application of geotechnical sensing for tailings dams;
- Sandra Lloyd from GroundProbe on the state of digital transformation in the SA;
- Rodney Podmore from Lecia on Hexagon Mine Monitoring for slope stability and deformation monitoring.

In preparation for the upcoming exams a presentation was delivered by Gerald Gainsford from Ekapa. Lastly, Radifadi Mamabolo from Assmang delivered a technical presentation on cavity management.

Candidates who received awards from the SANIRE 2023 AGM were recognised. The branch would like to congratulate Tshegofatso Rampedi (Paper 1 top achiever), Asivhanga Malovhele (Paper 3.4 top achiever) and Fikile Mokgethoa (RockStar Award) for their excellence.

The event was also attended by one of the inspectors from the Department of Mineral Resource and Energy who appreciated the information sharing session. The meeting was blessed by the attendance of Gert Van der Merwe who has over 30 years of experience in Rock Engineering. He shared his journey of being a Rock Mechanic throughout the years and remains promoting Rock Engineering in the region.

The meeting was a great success, and the branch would like to thank everyone who attended and shared their knowledge. The branch would like to appreciate and show their gratitude to the event sponsors; SkyGeo, GroundProbe, Lecia, Groundwork, Rocbolt, and Anglo American KIO (Sishen Mine). The NC branch is looking forward to hosting their end year function in November.



Photos from the SANIRE Northern Cape Branch Quarterly Meeting

TECHNICAL CONTRIBUTION

Presented below are abstracts and summaries from the papers that were awarded the Ortlepp, Salamon and Stacey awards, respectively at the annual General Meeting.

Calibration of the limit equilibrium pillar failure model using physical models by RP Els and DF Malan

Abstract

The limit equilibrium model, used in displacement discontinuity codes, is a popular method to simulate pillar failure. This paper investigates the use of physical modelling to calibrate this model. For the experiments, an artificial “pillar” material was prepared and cubes were poured using the standard 100 mm × 100 mm civil engineering concrete moulds. The friction angle between the cubes and the platens of the testing machine was varied by using soap and sandpaper. Different modes of failure were observed depending on the friction angle. Of interest is that significant load-shedding was recorded for some specimens which visually remained mostly intact. This highlights the difficulty of classifying pillars as failed or intact in underground stopes where spalling is observed. The laboratory models enabled a more precise calibration of the limit equilibrium model compared to previous attempts. Guidelines to assist with calibration of the model are given in the paper. The limit equilibrium model appears to be a useful approximation of the pillar failure as it could simulate the stress-strain behaviour of the laboratory models.

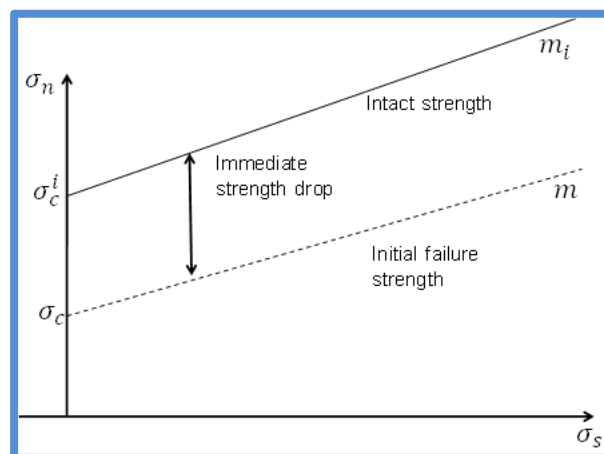
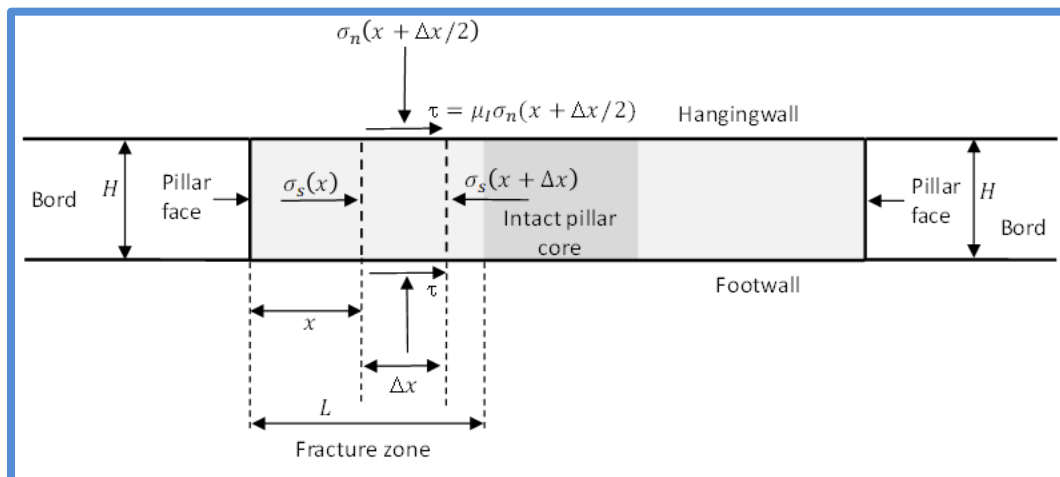


Figure 1. A diagram illustrating the important components of the limit equilibrium model. The diagram at the top illustrates the forces acting on a thin slice of rock inside the pillar. The diagram at the bottom illustrates the strength failure envelopes and the associated parameters (after Wessels and Malan, 2023).

The work described in this paper illustrated that laboratory experiments, using an artificial rock material, is a valuable tool to assist with the calibration and validation of complex failure models, such as the limit equilibrium model. Physical experiments to assist with rock engineering studies has been neglected in South Africa in modern times and this capability needs to be rebuilt.

The tests on the artificial pillars confirmed once again that the interfaces between the pillar and hangingwall, and the pillar and footwall, have a significant effect on the pillar strength. For these tests, there was approximately a 60% reduction in average pillar strength (Table 2) when the friction angle on the interface decreases from 38° to 16°.

The limit equilibrium model could simulate the reduction in pillar strength for a decrease in friction angle on the interfaces. It was also successful to simulate the stress-strain behaviour of the pillars. This work therefore illustrates the value of the model, provided the parameters can be calibrated. A drawback of the current model is that it assumes a symmetrical geometry with weak partings at both the hangingwall and footwall. This could be easily replicated in the laboratory with the artificial pillars, but this is rarely the pillar boundary conditions in underground stopes where only one weak plane may be present. Further work therefore needs to be done to extend the model to account for asymmetric conditions.

Additional laboratory work for a wider range of friction angles will also be useful to verify the calibration methodology proposed in the paper. It is not an easy task to find suitable materials to reduce or increase the friction angle on the interface in a stepwise fashion. It was also disappointing that the artificial pillar material still resulted in significant variability in strength for the various samples tested. The reasons for this need to be explored to reduce this variability in future experiments.

Investigation of the Source Mechanism of Mining Induced Seismic events at Kloof Gold Mine, South Africa by R Masethe, R Durheim and M Manzi

Abstract

An investigation into the source mechanism of mining-induced seismic activity plays a vital role in understanding the various modes of failure observed in the underground deep-level South African mining environment. The seismic events data for this study was captured by the mine-wide seismic system operating at Kloof Gold Mine. This system comprises 40 4.5 Hz tri-axial geophones sampling at 6 kHz installed at locations that surround the stopes mining the Ventersdorp Contact Reef (VCR), Main Reef (MR) and Kloof Reef (KR). A set of 103,753 mining-related seismic events (-3.0E ML £2.7) that occurred during 2017 and 2018 was selected for this study. The mining depth of these seismic events ranges from 1600 – 4200 m; most located close to stopes mining the VCR ore body. The main criteria used to select a subset of events for detailed analysis were the number of stations that recorded the seismic event and the azimuthal distribution of the sensors.

We analyzed the source mechanisms of 75 large mining-related seismic events (ML1.5 - 2.7) recorded at 20 or more sites and located within the central part of the in-mine seismic network. These seismic events caused damage to stopes in Kloof Gold Mine. The energy radiated from the analyzed seismic events ranged between 2.29×10^6 and 3.45×10^8 J, the seismic moment from 5.00×10^{11} to 2.30×10^{13} Nm, log apparent volume from 5.93 and 7.75 m³, and the S- to P-wave energy ratio (E_s/E_p) from 1.1 to 19.9.

The source mechanisms of mining-induced seismic events aid in understanding the dominant modes of failure. Planes of weakness may be the result of mining-induced stresses or pre-existing geological structures. The E_s/E_p ratio, focal mechanism, and moment tensor solutions were interpreted in terms of the mapped geological structures and mining geometry. About 56% of the events were related to elements of the mining geometry (dip pillars, abutments and remnants); while 44% of the events located near known geological structures (faults, dykes). However, the focal planes and the mapped strike of structures were generally poorly aligned. Conventionally, the energy ratio is used as a discriminator to define two classes of events. Fault Slip ($E_s/E_p > 10$, 12 events), located between 1756 and 3919 m depths and Non-Shear ($E_s/E_p < 10$, 63 events), concentrated from 1625 to 4174 m below and above the ore body. We investigated whether this distinction is valid. We conclude that the moment tensor is a more reliable classifier as compare to the energy ratio (E_s/E_p).

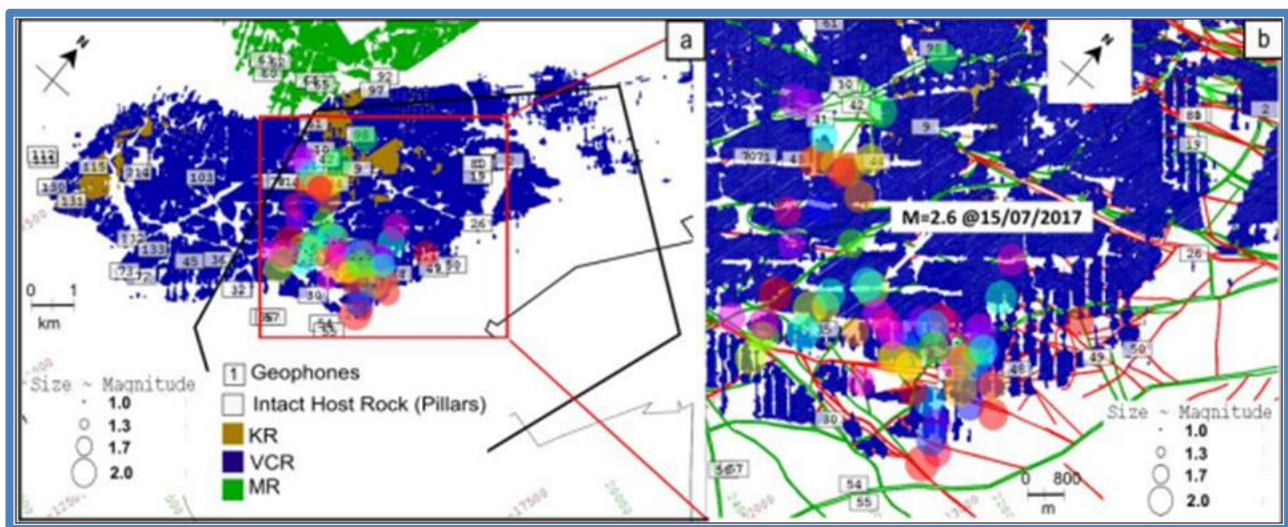


Figure 2. (a) Mine plan view showing the location of seismic events (coloured circles). (b) Zoomed-in view showing the spatial distribution of the seismic events, mining layout and the geology in the closer range (1 Jan 2017 and 30 Dec 2018). KR: Kloof Reef, VCR: Ventersdorp Contact Reef and MR: Main Reef.

A better understanding of the seismic source mechanism is crucial if the seismic data is to be used more effectively as a mining planning tool in the deep-level gold mines. Surprisingly, about 97% of the 63 non-shear events (classified according to the energy ratio criterion) had a dominant deviatoric (DEV) component. Only 3% of the 63 non-shear indicated a high volume change. Out of the 12 shear-type events, only 38% indicated the dominant DC component with low CLVD. Most of these seismic events were plotted at a shallower depth than those with a dominant CLVD, which mostly occurred between 2800 - 3200 m, close to the reef horizon. The overall 85% of the total moment tensor solutions had a dominant double couple ($\geq 60\%$) component (DC); in some cases, the compensated linear vector dipole component (CLVD) and isotropic component (ISO) accounts for 15% of the selected events. Of these seismic events, 21% exhibit positive ISO and CLVD indicating tensile crack dilation ('explosions') while 57% showed 8 negative ISO and CLVD representing tensile crack closure ('implosions'). The interpretations of either the explosive or implosive point source model (isotropic component) links to the volume change process within the rock mass affected. The E_s/E_p ratio, focal mechanism, and moment tensor solutions were related to the mapped geological structures and mining geometry close to the hypocenter. The classification of crush- and shear-type events based on the E_s/E_p ratio and the moment tensor components were poorly correlated. We conclude that the moment tensor is a more reliable classifier.

The Geotechnical Design of the Highwall Mining Layout: A Case Study at the 5 Seam Operation of Glencore Coal SA by C Selai

Abstract

The highwall mining method was adopted as an alternative method for extracting the remaining No.5 coal seam reserves at the 5 seam operation. There is currently a limited practical knowledge on the rockmass response to this mining method on various mining geometries. A great deal of experience has been derived and documented over the years in Australia and the USA, for instance and a number of empirical methods have been derived for pillar strength estimation. These require validation and verification against the local conditions and design geometries. This research project is aimed at determining and validating the suitable pillar dimensions and spacing at various panel geometries. A hybrid methodology was adopted comprising of empirical and numerical modelling approaches. Pillar safety factor was determined using the Mark- Bieniawski pillar strength empirical formula and pillar stress obtained from UDEC numerical modelling software. For stability assessment, a threshold safety factor of 1.3 was adopted from the ARMPS-HWM minimum safety factor guidelines based on the panel span. Furthermore, the UDEC modelling outputs were closely monitored to ascertain the stress distribution and plastic (yielding) conditions as indication of potential instability. These results were validated by means of using the available instrumentation results that were obtained as the mining progresses using Geokon Stressmeter. Based on the safety factor assessment, the minimum web pillar width at which the threshold safety factor of 1.3 is attained is 1.2m. This is achieved at a panel width of 28m (6 cuts / 5 pillars per panel) up to the maximum cover depth of 50m, which corresponds with the cover depth obtained from the geological information. The UDEC modelling assessment results depicted mainly potential shear failure mode, which is indicative of the presence of confinement. As a result, a 28m panel width comprising of 5 x 1.2m web pillars was selected for the initial pillar design layout and for instrumentation. The mining height of 1.8m was used based on the thickness of the coal seam and cover depth ranging from 40m to 45m. The available strain measurement results indicate the maximum web and barrier pillar stresses are less than $0.3 \times UCS$ (8.33MPa) and no failure or crack initiation was expected on the pillars. This was also confirmed during the actual mining activities, where no pillar fracturing occurred. These results present opportunities for layout optimization at various geometries.

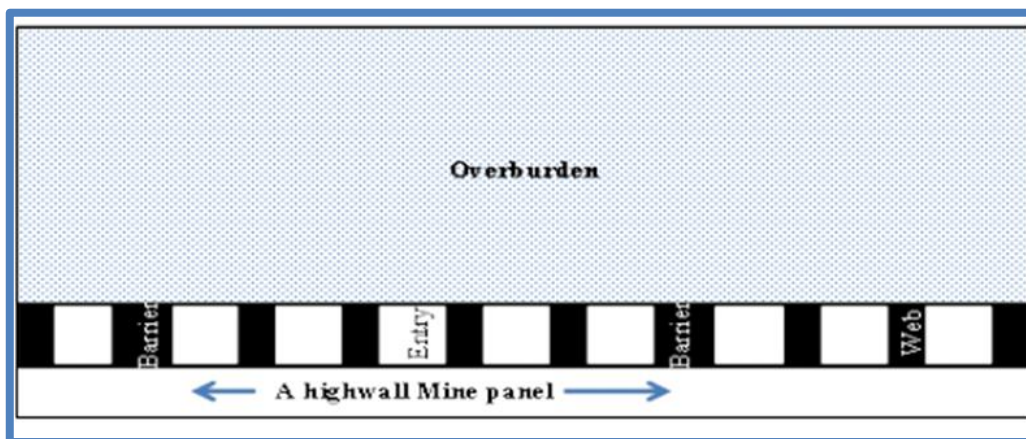


Figure 3: The cross-sectional view of highwall mining layout (after Luo, 2014)

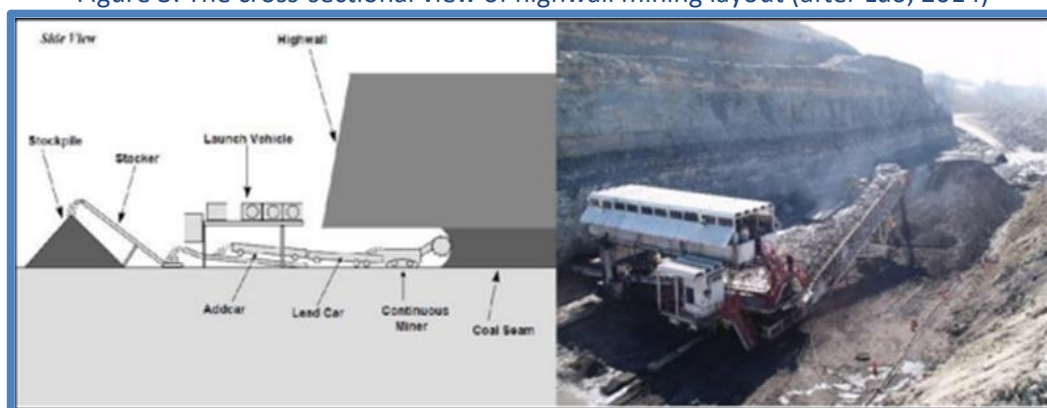


Figure 4. ADDCAR Highwall Mining system during operation (ADDCAR Systems LLC, 2018)

The main aim of this project was to design the highwall mining layout for extracting the coal reserves that could not be safely and economically mined out using the conventional underground mining method. This was achieved by employing a hybrid approach, which comprises of empirical pillar strength estimation and numerical modelling to determine the pillar stresses for varying panel layouts. The Universal Discrete Element Code (UDEC) was used to determine the web and barrier pillar stresses at varying cover depths and extraction heights. The width of the excavations was kept constant (3.6m) throughout the analysis in line with the width of the cutting drum of the equipment. The pillar safety factor was then determined as the ratio of pillar strength and vertical stress and a threshold of 1.3 was utilized in line with the ARMPHS-HWM minimum safety factor guidelines (Mark, 2006) for a panel width of less than 60m.

The following conclusions can be drawn from the study, using the methodology described above:

- A 0.8m web pillar attains the threshold safety factor with the panel widths of 34m and 43m at the highest w/h ratio of 0.67. These correspond with the cover depths of 36m and 41.5m, respectively.
- The numerical modelling results indicates that a 0.8m web pillar width exhibits tensile/splitting failure below w/h ratio of 0.5 and shear failure beyond this w/h ratio. However, with an increase in cover depth and panel width, further yielding is observed, which results in stress transfer onto the barrier pillar whilst the web pillar stress decreases and then remains constant. This behaviour of stress change will result in a higher safety factor but in reality, this pillar will be undergoing splitting or tensile failure.
- A 1.2m web pillar attains the threshold safety factor at the cover depths of 45m and 43m corresponding with 37m and 47m panel widths, respectively. 93 At the panel width of 28m, this pillar width plots above the threshold safety factor across all of the cover depths.
- The stress distribution on a 1.2m web pillar width indicates that despite yielding of the sidewalls in some cases, the core of the pillar still possesses the load bearing capacity. The influence of an increased panel width is more pronounced with the lower w/h ratio, where the indications are that the core has also yielded.
- Increasing the web pillar size to 1.6m results in a threshold safety factor being attained across all panel widths up to the cover depth of 40m. As expected, due to the increased pillar size, the core of the pillar is wider and not significantly affected by yielding zones emanating from the pillar edges.
- A 2m web pillar safety factor plots above the threshold for all of the cover depths and panel widths.
- The stress measurements were conducted in order to monitor the loading cycle of the web and barrier pillars during the highwall mining process. Although this was conducted for one panel geometry, the maximum stress measured until the end of the project was found to be 2.4MPa on the barrier pillar and 3.14MPa on the web pillars.

This is far below the average UCS of 25MPa and the minimum UCS of 14MPa of the No.5 coal seam. Using the rule of thumb for crack initiation at $0.3 \times \text{UCS}$ (8.33MPa), no failure or crack initiation was expected on the pillars, since the measured stresses are all well below this criterion.

THE NEXT **ROCK**Star

ROCK STAR OF THE QUARTER



Full Name:	Tshegofatso Rathipa Mabitse Rampedi
Company/Organisation:	Ekapa Minerals
Designation:	Senior Geotechnical Officer
Date and Place of Birth:	5 May 1998, Polokwane, Limpopo
Education:	BSc. Mining Engineering (Wits)
First Job:	Mining Intern
Philosophy of Life:	Where there is a will, there is a way.
Favourite Food/Drink:	Samp and stew
Favourite Sport:	Soccer

Q. What would you consider as your biggest career faux pas to date and what lesson/s have you learned from it?

Short-term thinking in the early stages of my career. I have learnt that the early stages of your career are mainly for knowledge and skills absorption, rather than chasing money.

Q. What motivates you to get out of bed in the morning?

Besides my 5 alarms? The hope for a better future.

Q. What is your favourite quote (why)?

Do your best, God will do the rest.

Q. What is your personal song (why)?

I have different songs for different moods and different settings. For work, Ubomi abumanga has to be up there.

Q. What is your favourite movie?

I am more of a series guy.

Q. If the story of your life were to become a biopic, what would the title be?

The climb.

Q. If the story of your life were to become a biopic, which famous actor or actress would play you?

Damson Idris.

Q. What is the best vacation you've been to or plan on going to?

Mauritius. There is just something about water. Something that just makes you want to look at it but not play close to it.

Q. Do you have a favourite newspaper, blog?

Twitter

Q. How do you unwind?

I sleep. Sometimes, I play Playstation to unwind.

Q. What is your greatest fear?

Death of loved ones.

Q. What is your hidden talent?

My ability to memorise.

Q. What is the one thing that very few people know about you?

I am an introvert.

Q. If you could interview one person (dead or alive) who would that be (why)?

I would interview myself. It is not every day that you get an opportunity to hear the thoughts of a wise man, lol.

Q. If you could only drink one beer/cocktail for the rest of your life, what would it be?

Corona.

Q. If you were an animal what would you be (why)?

An eagle. I believe I have a sharp eye. Eagle-eye perspective.

Q. If you were on death row, what would your last meal be?

Samp and stew.

Q. What do you want to be remembered for?

I want to be remembered for all the kind gestures I have made in my not so perfect life.

Q. If you were stuck on an island what three things would you bring?

Phone, food and family. Not in that order, lol.

Q. If you were a rockstar, what would your stage name be?

Xtra. That's what I am called on the streets.

Q. Growing up, what was your dream career?

I always thought I would be the one to inherit Lionel Messi's number 10 jersey, even as a defender. Definitely a soccer player

Q. Why did you choose Rock Engineering as a career?

At a frustrated point in my career as a mining intern, a Rock Engineer managed to pick me up and show me the light. Haha, production just wasn't for me.

Q. What are 3 words to describe Rock Engineering?

Control of rocks.

Q. What do you find the most challenging of Rock Engineering?

Dealing with stakeholders that oppose rock engineering principals based on feelings and not facts or numbers.

Q. What do you like most about Rock Engineering?

Solving a complex problem that at first looked nearly impossible.

Q. What are some areas that you believe will become of increasing importance in the near future of the rock engineering discipline?

Innovation, technology and research. Every day we reach lower depths that we have not reached before, some empirically-based theories need to be re-evaluated and new ways of doing things need to be adopted.

Q. What is your view on the continued loss of critical Rock Engineering skill in South Africa?

Loss of skill is inevitable and essential. People should seek new challenges and opportunities. If no one leaves, newer ideas would not come.

Q. 28. What solutions would you propose to abate this looming problem?

Loss of skill is inevitable. We just need to ensure that there is information exchange between the highly experienced personnel and the juniors entering the industry. The baton should always be passed. Theories should always be improved and worked upon

Q. Who is your role model/mentor? What is the best advice you have ever been given?

I have a group of mentors, all assisting me develop in different spheres of life. The best advice I have heard is "you can dream, but do not neglect the execution".

Q. What advice would you give to someone who wants to choose Rock Engineering as a career?

Besides the stress, long hours, responsibility etc.. I think it's worth it. Be humble and have a willingness to learn.

SANIRE
SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

ROCKtalk

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If you are interested in submitting content for the next issue of **ROCKtalk**, please send an email or WhatsApp message with your proposal along with a short bio and photo.

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WE ARE LOOKING FOR THE NEXT ROCK STAR

NOMINATIONS ARE NOW OPEN

WE ARE SEARCHING FOR THE NEXT ROCK STAR WHO IS GOING ABOVE AND BEYOND

Please send us your nomination of who you would like to see interviewed in the next issue of **ROCKtalk**

DEADLINE FOR NOMINATIONS: 27 JUNE 2022

FOR FURTHER ENQUIRIES OR TO SUBMIT YOUR NOMINEE, PLEASE SEND AN E-MAIL TO: info@sanire.co.za

PLEASE INCLUDE THE FOLLOWING IN YOUR NOMINATION

- Name & Surname of Nominee
- Mining Operation of Nominee
- Designation of Nominee
- Nominee's contact details
- A short motivation as to why you have nominated the person

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SANIRE CALENDAR

Visit <https://www.sanire.co.za/news/events-calendar> for updated up-coming events.

Tuesday 14 November 2023
MPAS meeting :: Council Meetings
Friday 24 November 2023
Eastern Bushveld Branch Meeting :: Branch Meetings
Wednesday 29 November 2023
Council meetings - Gauteng :: Council Meetings



SANIRE
SOUTH AFRICAN NATIONAL INSTITUTE
OF ROCK ENGINEERING

Free – Vaal Branch Meeting

Date: 10 November 2023

Location: Parys Golf and Country Estate

Time: 14h00
(Persons who want to play golf before the meeting need to book their round and carts with the Golf club.)

SANIRE VISION, MISSION, & VALUES

Vision

To actively promote the South African rock engineering profession.

Values

- Honesty
- Integrity
- Professionalism
- Accountability
- Transparency

Mission

SANIRE promotes the advancement of the rock engineering discipline by encouraging and promoting:

- Interest and the development of education in rock engineering
- Professional practice and high ethical standards
- Networking, collaboration and information exchange
- Research areas



HIGH PERFORMING ROCK SUPPORT SOLUTIONS

GROUND AND WATER CONTROL

We work with our mining customers to create solutions that improve efficiency, cost and safety. We supply a full portfolio of rock support products, backed by skilled and highly experienced technical sales and service teams. We are experts in identifying project needs, providing training and assisting with applications within our portfolio.

WE OFFER:

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- > Lokset Resin capsules
- > Capcem encapsulated and pumpable cement grouts
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- > Steel and GRP Rock bolts and tendons
- > Mining meshes
- > Pumps and accessories for product application

minovaglobal.com | globalmarketing@minovaglobal.com | +27(11) 9231900
23 Botha Street, Alrode, South Africa, 1451

SANIRE
SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

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WE ARE LOOKING FOR YOU

WE VALUE YOUR INPUT AND WE ARE CALLING ON OUR MEMBERS TO CONTRIBUTE CONTENT TO THE SANIRE NEWSLETTER

THIS IS AN OPEN INVITATION CALL FOR ARTICLES

If you are interested in submitting content for the next issue of **ROCKtalk**, please contact us at info@sanire.co.za with your proposal along with a submission date.

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Square	60mm	60mm	R 1000,00

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EDITORS CORNER

Did you know?

It can rain diamonds on other planets!!



The atmospheres in Neptune, Uranus and Saturn have such extreme pressure that they can crystallize carbon atoms and turn them into diamonds, American Scientist reports. How do we know this science fact? Researchers were able to create the correct conditions in a lab to prove this occurs on Neptune and Uranus. Separately, other researchers speculate that it may rain as much as 2.2 million pounds of diamonds on parts of Saturn every year.



SANIRE would like to hear from you. If you have any information or content you would like us to include in the next newsletter, please submit them via email to

mbalenhleb@mpas.org.za

fezekilem@Dwarsrivier.co.za

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