



HUMAN  
RIGHTS  
WATCH

# The Forever Mines

Perpetual Rights Risks from Unrehabilitated Coal Mines  
in Mpumalanga, South Africa

# **The Forever Mines**

**Perpetual Rights Risks from Unrehabilitated Coal Mines  
in Mpumalanga, South Africa**

Copyright © 2022 Human Rights Watch

All rights reserved.

Printed in the United States of America

ISBN: 978-1-62313-986-5

Cover design by Rafael Jimenez

Human Rights Watch defends the rights of people worldwide. We scrupulously investigate abuses, expose the facts widely, and pressure those with power to respect rights and secure justice. Human Rights Watch is an independent, international organization that works as part of a vibrant movement to uphold human dignity and advance the cause of human rights for all.

Human Rights Watch is an international organization with staff in more than 40 countries, and offices in Amsterdam, Beirut, Berlin, Brussels, Chicago, Geneva, Goma, Johannesburg, London, Los Angeles, Miami, Moscow, Nairobi, New York, Paris, San Francisco, Sydney, Tokyo, Toronto, Tunis, Washington DC, and Zurich.

For more information, please visit our website: <http://www.hrw.org>



# The Forever Mines

## Perpetual Rights Risks from Unrehabilitated Coal Mines in South Africa

**Map**..... i

**Summary**.....1

**Recommendations** .....7

- To the Department of Mineral Resources and Energy (DMRE) .....7
- To the Department of Forestry, Fisheries and Environment .....7
- To the Minister of Forestry, Fisheries and Environment.....7
- To the Department of Water and Sanitation .....7
- To the Government of South Africa .....8
- To Parliament’s Portfolio Committee on Mineral Resources and Energy.....8
- To Gert Sibande District Municipality .....8
- To Albert Luthuli Local Municipality .....8
- To All Companies with Valid Coal Mining Authorizations .....9

**Methodology**.....10

**Background**.....13

**Findings** .....17

- Risks from South Africa’s Abandoned Mines ..... 17
- Government’s Failure to Ensure Proper Mine Closure .....29
- Access to Information ..... 37

**South Africa’s Domestic, Regional, and International Human Rights Obligations** ..... 40

- Right to Water .....40
- Right to Health..... 41
- Right to a Healthy Environment.....42

**Acknowledgments**..... 44

**Annex**..... 46

- Letter from Human Rights Watch to the Department of Mineral Resources and Energy, South Africa, October 30, 2021 .....46
- Letter from Human Rights Watch to Imbabala Coal (Pty) Ltd, October 31,2021 ..... 50



# Map





## Summary

On September 24, 2016, everything changed for two families in Ermelo, a town in Mpumalanga province, eastern South Africa, in the heart of South Africa's coal country. It was the day 17-year-old Xolani Mthembu and his 14-year-old friend, Sifiso Yende, drowned in an abandoned coal mine in Wesselton on the northern outskirts of Ermelo. The mine was last owned by Imbabala Coal (Pty) Ltd. The company had ceased operating the mine five years earlier when the Department of Mineral Resources and Energy (DMRE) found it did not have the requisite license for water use. Subsequently, the abandoned mine filled with rainwater in which the two teenagers drowned.

Following the drownings, an official from the Msukaligwa Local Municipality, one of the municipal authorities in Ermelo, promised that the government would ensure access was restricted and erect warning signs at the mine site. Five years later, when Human Rights Watch went to visit, the site was still completely accessible with no fence, restrictions on access, or warning signs. Thomas Mthembu, Xolani's uncle, described to Human Rights Watch the ongoing risks such abandoned mines pose to residents of the community:

“What we ask ourselves is whether this is how things should be... that mine wasn't rehabilitated and there isn't even a warning sign, so the children saw [it as] a swimming pool. The worst part is that my nephew [will not be] the last one. There are still children that will go there.”

Xolani and Sifiso's drownings underscore both the risks of accidents from unfettered access to unrehabilitated mines and the South African government's failure to address these risks.

Across South Africa, according to government records, there are no fewer than 400 abandoned coal mines like the one in Wesselton, Ermelo where the boys drowned. In addition to accident risks, abandoned and unsecured mines leave behind a toxic legacy of polluted land and highly-acidic water that can harm local communities in a myriad of ways.



Residual coal deposits in Mpumalanga are also accessed by artisanal miners, known as *zama zamas* [an isiZulu term meaning “to try and try again”]. Artisanal miners may eke out a living, but at high risk: they have little protective equipment and enjoy no labour or health and safety protections while working in dangerous underground mine shafts.

Artisanal miners Human Rights Watch interviewed said there are more deaths than is publicly acknowledged in official records or published in the local media. Because artisanal miners are working illegally, most of their deaths are never recorded by law enforcement and police often do not investigate. An independent analysis by an investigative journalist of South African English-language media coverage between 2012 and 2015 found reports of 312 deaths, at least 150 because of collapsing tunnels, gas poisoning, suffocation, and explosives accidents.

The risks from unrehabilitated mines extend far beyond the people who access the sites – they risk polluting the water of millions of South Africans. Coal across South Africa is found predominantly in ores with sulfur-bearing minerals. When these ores come into contact with water and air, sulfuric acid is created, which can lead to further leaching of heavy metals from ores. This reaction poses significant risks to water and agricultural land in many parts of South Africa, including in Mpumalanga. Acid mine drainage (AMD), if left untreated, can have devastating impacts: it can render water unusable, soils unproductive, and even corrode municipal infrastructure for water delivery. Management of AMD is a complex, technical, and expensive process, but one that is part of proper operational management of a mine, both during and after its operation. In South Africa, the lack of both proper rehabilitation of mines and enforcement of regulatory requirements increases concerns about AMD. The central government does not provide basic data on surface water or groundwater quality that would allow it or others to identify and quantify risks of AMD to human health, and thereby meet obligations under the right to health to protect against harm. With respect to the right to water, there are domestic legal obligations to ensure that potable water is available, yet neither the national nor local governments have taken effective steps to address the risk that AMD is impacting water quality.

In at least one case, the national government has been slow to react even when aware of the risks from AMD. In 2012, the High Court of South Africa directed the Albert Luthuli Local Municipality, one of Mpumalanga’s 17 municipalities, to take action to tackle a water crisis in the town of Carolina. In Carolina, municipal infrastructure had become severely

corroded from AMD and left water in the town unsafe for human consumption. Residents who spoke to Human Rights Watch in 2021 pointed out that little had changed following the 2012 judgement. Residents complained of upset stomachs and other health problems, which they believe is due to, and is consistent with consumption of, contaminated water.

Residents described other risks from unrehabilitated mines, including the spontaneous combustion of exposed coal seams that can cause injury and further air pollution, and structures built over abandoned coal mines sinking and subsiding.

Based on a review of documents and data from the South African government, reports from Parliamentary meetings, research by South African NGOs, academic papers, and interviews with 34 community members living in the vicinity of abandoned mines or working as artisanal miners, in particular in and around Ermelo, this report describes the human rights risks posed by unrehabilitated coal mines in South Africa's Mpumalanga province.

So far, the South African government has not taken adequate steps to ensure coal mining companies rehabilitate mine sites despite the Minerals and Petroleum Resources Development Act (MPRDA) requiring companies to do so. Improper assessments of future cleanup costs by the Department of Mineral Resources and Energy (DMRE) and a systemic lack of enforcement have left residents of communities across the country – not coal companies – bearing the cost of coal extraction. Underscoring the lack of enforcement, 103 mines were operating without the required water use licenses as of July 2014. Water use licenses are essential because they are the main mechanism used by the Department of Water and Sanitation (DWS) to assess and mitigate, including through rehabilitation, the impacts of an operation on water users and on surrounding water resources, including groundwater. Just six enforcement actions were taken on these 103 mine sites and no criminal prosecutions resulted.

Future cleanup costs required to be set aside by companies rarely cover actual costs of rehabilitation and are rarely updated annually despite a legislated requirement to do so. For example, as part of the 2005 mining authorization for its Ermelo coal mine, Imbabala Coal (Pty) submitted a financial provision of just R600,000 (approximately US\$92,000) to cover the costs of rehabilitation. Following a 2019 community-led campaign to address the legacy of the unrehabilitated coal mine that ceased operations in 2011, DMRE assessed

the cost of remediation at R450 million (US\$31 million), 750 times the amount DMRE had received 14 years earlier as security.

The national government's lack of action in tackling the many unrehabilitated coal mines and other coal infrastructure in Mpumalanga and other locations across South Africa poses risks for the residents of those communities. Of the 445 closure certificates – which indicate rehabilitation has been completed to government satisfaction – issued country-wide between 2011 and 2016, only six were in Mpumalanga. None of the six were for coal mines, despite Mpumalanga having nearly 800 abandoned mines as of 2019 (and 235 active coal mines). Potentially toxic tailings, essentially waste rock from mining, are often found near the abandoned mines. Mining sites are often easily accessed by residents and are deep and dangerous and often filled with water. The central government has done little to ensure sites are secured, let alone cleaned up.

Prior to 2002, before parliament passed the MPRDA, there did not exist a legal requirement to clean up mines in South Africa. Since then, weak enforcement of the legislation has meant, in practice, few steps have been taken to rehabilitate mines. Costs of proper mine rehabilitation are usually significant, sometimes tens of millions of US dollars, particularly in locations that are acid-bearing. The need to clean up a mining site is most evident after the mining companies have exhausted almost all the easily-extracted ore, and so there is little financial incentive for companies to incur what they consider an additional cost, especially because legislation requiring clean ups is rarely, if ever, enforced.

This needs to change. The government should ensure mines are rehabilitated to the level required by law and that the costs of the cleanup are borne by the mining company. By also ensuring that companies have to pay the real cost of coal extraction, rather than communities de facto subsidizing the cost, coal will become less appealing as an energy source versus cleaner and lower emitting sources of energy.

Mpumalanga residents described receiving no information from local, provincial, or national governments about the risks posed by unrehabilitated mines. Residents did not have access to even basic information needed to understand the health risks including on water quality, extent of accidents, or the location of abandoned mines.

The 2000 Promotion of Access to Information Act (PAIA) has, on paper, improved information accessibility for civil society and others seeking better access to government information; in practice, however, information requests are subject to significant delays, with information received often incomplete or fragmented. Human Rights Watch filed four PAIA submissions asking for basic information related to water quality, abandoned mines, and deaths on unrehabilitated mine sites, none of which came back within the legislated time. Basic information that should be publicly available on government websites even without the need for PAIA submissions, such as water quality data or abandoned mine locations, was incomplete or missing with no explanation or justification.

Coal is one of the most widely used fossil fuels in the world today; it is also the most polluting. The use of coal as an energy source has significant health consequences for communities that live near coal mines and powerplants, as these coal developments release pollutants including particulate matter, sulfur dioxide, nitrous oxides, and heavy metals – all of which can contaminate communities’ air and water sources. At the global level, coal burning is a major factor contributing to the climate crisis, as it accounts for 20 percent of the world’s greenhouse gas emissions.

South Africa’s experiences with mine rehabilitation provide important lessons for other countries whose coal industries will progressively close as the world moves away from this dirty fuel source. There is growing debate in South Africa and internationally about how a “just transition” can ensure that as economies shift from one based on fossil fuels to cleaner forms of energy, fossil fuel workers are retrained, retooled, and ready for new jobs. This is important, but little to no attention is given to the physical mine sites themselves and the toxic legacy they leave behind. The risks described to Human Rights Watch by those who live adjacent to coal mines underscore exactly why this subject is pressing and should be included in any “just transition” discussions or government strategies.

While the focus of this report is on coal, its findings are broadly applicable to South Africa’s other mineral sectors and for the over 6,000 abandoned mines in South Africa. Now is the time to ensure the lessons learned from coal mining, especially those related to the need for the full range of costs from mining development to be borne by the mining industry and not the communities living next to the mines, are applied to future mining activities. Demand for minerals to fuel the transition to clean energy is predicted to increase exponentially, and South Africa is one of a number of countries with significant

mineral resources needed in that transition, including nearly 80 percent of the world's manganese ore deposits, a key metal in lithium-ion batteries.

South Africa's constitution recognises the right to a healthy environment. Other human rights, including the right to health, are enshrined in regional and international treaties, including the African Charter on Human and People's Rights and the International Covenant on Economic, Social and Cultural Rights. These rights mean little in practice to the local communities who face the lasting legacies of the government's inaction. South Africa has an opportunity to change course by protecting the rights of people and communities living adjacent to old and unrehabilitated coal mines.

South Africa's government should ensure that companies provide adequate financial security to DMRE for the full cost of coal mine rehabilitation before mining commences, that those funds are used to clean up mine sites after mining stops, and that companies which fail to do so are held to account. Authorities should develop and implement a comprehensive program of rehabilitation of abandoned mines. Recognizing the need to tackle the abandoned mine problem, the Minister of Minerals and Energy published a draft National Mine Closure Strategy in May 2021 and draft financial provisions for mine rehabilitation. Yet to be passed, these are important, albeit long overdue, initial steps toward addressing the legacy of unrehabilitated mines and ensuring the safety, socio-economic and environmental impacts of mine closures are managed in a more integrated way.

# Recommendations

## To the Department of Mineral Resources and Energy (DMRE)

- Ensure the rehabilitation of recently closed mines and develop and promptly implement a program for the rehabilitation of derelict and ownerless mines in line with regulatory requirements.
- Secure abandoned coal mines to prevent public access, including by restricting access through fencing and erecting warning signs at abandoned mine sites.
- Pursue and hold to account companies that fail to comply with DMRE's section 28 directives under the National Environmental Management Act (NEMA) or other applicable legislation, including by imposing fines commensurate to the gravity of the consequences for individuals and communities of company non-compliance.
- Ensure that during the review and approval of mining permits the amounts companies are required to set aside are sufficient for the adequate rehabilitation of mines and that rehabilitation plans and funds set aside are updated annually as mine development evolves.
- Make companies' rehabilitation plans, including financial provisions set aside as part of their mining authorization, available on DMRE's website.

## To the Department of Forestry, Fisheries and Environment

- Ensure periodic review and updates of financial provisions as mining operations evolve.

## To the Minister of Forestry, Fisheries and Environment

- Finalise regulations on the financial provisions that mining companies should set aside and ensure provisions are adequate for mine rehabilitation and remediation of associated environmental and water degradation.

## To the Department of Water and Sanitation

- Ensure that coal mining companies acquire water use licenses, the details of which should be publicly available and accessible, including their terms and conditions.

- Ensure the cumulative impacts of the coal industry on the water quality of catchment areas are monitored, are publicly available, remain compliant with national and international standards, and that the risks are clearly communicated to impacted communities.
- Improve water quality data and public access to it.

### **To the Government of South Africa**

- As coal communities bear the socioeconomic brunt of mine closures, ensure the re-skilling and retraining of current or past coal industry workers so they can be employed in the rehabilitation of coal mines.
- Become the first African state to ratify the Aarhus Convention.

### **To Parliament's Portfolio Committee on Mineral Resources and Energy**

- Publicly release any reports related to derelict and ownerless mines, including from the Department of Mineral Resources and Energy's and the Council of Geosciences' Project on Ownerless and Derelict Mines and provide an update clarifying the project's current status.

### **To Gert Sibande District Municipality**

- Coordinate with the Department of Mineral Resources and Energy to ensure unrehabilitated mines within the municipal boundary have restricted access and warning signs.
- Provide support and assistance to the Msukaligwa Local Municipality in handling environmental complaints from community members.
- Provide support and assistance to the Albert Luthuli Local Municipality in providing water tankers (*JoJo* tanks) throughout the communities of Caro Park and Silobela and restoring access to clean, safe water through water infrastructure.

### **To Albert Luthuli Local Municipality**

- Fully implement the July 2012 judgement of the High Court of South Africa to provide potable water in line with national standards.
- Restore the provision of *JoJo* tanks throughout the communities of Caro Park and Silobela as a temporary measure while developing a comprehensive and time-

bound plan to upgrade municipal infrastructure to a level sufficient to ensure safe drinking water.

- Provide regular, up-to-date information to residents on the water quality of both municipal-supplied water and boreholes, and communicate risks and strategies to mitigate those risks.

### **To All Companies with Valid Coal Mining Authorizations**

- Remediate the environmental degradation and pollution caused by coal mines, including the treatment of mine-impacted water, to acceptable standards.
- Provide a rehabilitation guarantee by a registered bank or financial institution to cover the costs of rehabilitation, including post-cleanup monitoring.



## Methodology

This report describes the human rights risks of unrehabilitated coal mines in South Africa. It is based on a review of documents and data from the South African government, reports from Parliamentary meetings, research by South African NGOs, academic papers, and interviews with 34 community members, artisanal miners, local NGO representatives, health workers, and local government officials.

While many of the risks identified in this report apply to South Africa's mining sector in general, this report focuses on coal mining because of the immediate and long-term potential for closures of significant numbers of coal mines in South Africa. It is also important in the context of a broader discussion – in South Africa and internationally – about the environmental and human rights dimensions of transitioning energy supplies away from fossil fuels.

Human Rights Watch interviewed community members in-person in Ermelo and Carolina for this report, compliant with all mandatory Covid-19 safety guidelines. In May 2021, Human Rights Watch interviewed eight residents of Carolina, two nurses from Carolina Hospital, and a nurse from Silobela Clinic in Carolina. Researchers also interviewed by phone representatives of nongovernmental organizations including the Association for Water and Rural Development, Lawyers for Human Rights, Centre for Environmental Rights, WoMin, and Federation for a Sustainable Environment on the issues of AMD and unrehabilitated mines in South Africa. Additional in-person interviews were conducted in Ermelo, Mpumalanga in September 2021 with artisanal miners.

Human Rights Watch chose to conduct research in Mpumalanga because the province is home to an overwhelming preponderance of coal mines and associated coal infrastructure in South Africa. Ermelo was chosen because it is emblematic of the challenges in Mpumalanga of managing coal mines long after companies have ceased operations and has a particularly active civil society who have been pressuring government to address the impacts of two unrehabilitated mines in the town, commonly known as Golfview and Imbabala. Carolina – which includes the Gert Sibdande District Municipality and the Albert Luthuli Local Municipality – was chosen because of the impact of AMD on the quality of the

town's water and because the lack of actions taken to implement a 2011 High Court decision are a striking example of the government's inattention to the AMD issue.



Former Golfview mine, Ermelo, South Africa, 2022, June 21, 2022. © 2022 Maxar Technologies.  
Source: Google Earth



Former Imbabala mine, Ermelo, South Africa, 2022, June 21, 2022. © 2020 Maxar Technologies.  
Source: Google Earth

Human Rights Watch wrote letters to DMRE, Eskom, Golfview Mining (Pty) Ltd, and Imbabala Coal (Pty) Ltd on October 30 and 31, 2021, November 12, 2021, and June 14, 2022 sharing the findings from our research and inviting them to respond to the issues raised in this report. No responses were received at the time of writing, and multiple efforts to contact Imbabala Coal (Pty) Ltd by email, phone, and mail between October 31, 2021 and June 23, 2022 were unsuccessful. Examples of these communications are included in the Annex.

# Background

## Coal Mining in South Africa

Coal is one of the most widely used fossil fuels in the world today; it is also the most polluting. The burning of coal, as well as gas and oil, for electricity is the single largest source of global greenhouse gas (GHG) emissions.<sup>1</sup> Coal-fired power stations account for 20 percent of the world's greenhouse gas emissions.<sup>2, 3</sup>

South Africa is a signatory to the Paris Agreement and submitted its updated Nationally Determined Contribution (“NDC”) in September 2021.<sup>4</sup> The level of ambition in South Africa's NDC is rated as “insufficient” by the Climate Action Tracker.<sup>5</sup>

South Africa is one of the top 20 countries in the world with the largest GHG emissions.<sup>6</sup> Around 80 percent of South Africa's GHG emissions come from its energy supply.<sup>7</sup> Seventy percent of South Africa's electricity is generated from coal.<sup>8</sup>

---

<sup>1</sup> “Global Energy Review: CO<sub>2</sub> Emissions in 2021,” IEA Global Energy Review, March 2022, available via: <https://www.iea.org/reports/global-energy-review-co2-emissions-in-2021-2>.

<sup>2</sup> Faith Birol and David Malpass, “It's Critical to Tackle Coal Emissions,” *Le Monde*, October 8, 2021 (accessed June 2022), available via: <https://www.iea.org/commentaries/it-s-critical-to-tackle-coal-emissions>.

<sup>3</sup> The Paris Agreement is the legally binding international treaty on climate change whose goal is to limit global warming to well below two, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. It was adopted by 196 Parties at COP 21 in Paris on December 12, 2015 and entered into force on November 4, 2016. South Africa ratified the agreement on November 1, 2016. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104, available via: [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf).

<sup>4</sup> *Ibid.* A Nationally Determined Contribution (NDC) is a country's action plan to cut emissions in line with the goals of the Paris Agreement. Each party to the Paris Agreement must submit a revised NDC every five years. For more information, see: <https://www.un.org/en/climatechange/all-about-ndcs#:~:text=Simply%20put%2C%20an%20NDC%2C%20or,update%20it%20every%20five%20years>. For a list of all NDC's see <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>. United Nations Framework Convention on Climate Change, Nationally Determined Contribution Registry, South Africa 2016/2022, available via: <https://www4.unfccc.int/sites/NDCStaging/Pages/Party.aspx?party=ZAF&prototype=1>.

<sup>5</sup> The Climate Action Tracker is “an independent, scientific analysis that tracks government climate action and measures it against the globally agreed Paris Agreement.” For more information, see: <https://climateactiontracker.org/about/>. It tracks countries' progress using one of five categories: critically insufficient, highly insufficient, insufficient, almost sufficient, and 1.5C Paris Agreement compatible. Highly insufficient “indicates that a country's climate policies and commitments are not consistent with the Paris Agreements 1.5C temperature limit.” Climate Action Tracker, South Africa Country Profile, October 29, 2021, available via: <https://climateactiontracker.org/countries/south-africa/>.

<sup>6</sup> “Profile: South Africa,” *The Carbon Brief*, Series Four, October 2018, available via: <https://www.carbonbrief.org/the-carbon-brief-profile-south-africa>.

Despite some recent indications from President Cyril Ramaphosa about moving toward cleaner energy, South Africa remains committed to coal.<sup>9</sup> According to the latest Integrated Resource Plan (“IRP”), South Africa’s plan for energy infrastructure development, coal “will continue to play a significant role in electricity generation in the foreseeable future” and will remain dominant in the energy mix up to 2030.<sup>10, 11</sup> Longer term, the government plans state that 35,000MW worth of coal-fired power plants will be decommissioned by 2050.<sup>12</sup>

Eskom, South Africa’s government-owned national electricity utility, is responsible for the generation, transmission, and distribution of 95 percent of all electricity to municipalities and end users and has 13 coal-fired power stations with a generation capacity of 37,698MW, using over 90 million tons of coal each year.<sup>13</sup> The majority of Eskom’s coal-fired power stations are located in the Mpumalanga province.<sup>14</sup>

South Africa’s coal deposits are one of the world’s largest.<sup>15</sup> The prevalence of coal mining and coal-fired power stations in the Mpumalanga province makes it the hub of coal development with significant impacts on local communities, including unsafe levels of air pollution, water, and soil pollution.<sup>16</sup>

---

<sup>7</sup> National Planning Commission, 2018, [https://www.gov.za/sites/default/files/gcis\\_document/201802/npc-energy-paper.pdf](https://www.gov.za/sites/default/files/gcis_document/201802/npc-energy-paper.pdf).

<sup>8</sup> *Ibid.*, p. 4.

<sup>9</sup> Presidential Climate Commission, “About Us,” Republic of South Africa, 2022, available via: <https://www.climatecommission.org.za/>.

<sup>10</sup> Electricity Regulation, South Africa Department of Mineral Resources and Energy, Integrated Resource Plan, Act 4, 2006, No. 42784, p. 12, available via: <http://www.energy.gov.za/IRP/2019/IRP-2019.pdf>.

<sup>11</sup> *Ibid.*, p. 41.

<sup>12</sup> *Ibid.*, p. 35. By comparison, South Africa generates a total of 58,095 MW of electricity.

“South Africa Power Fact Sheet,” USAID, October 2021, available via: [https://www.usaid.gov/powerafrica/south-africa#:~:text=According%20to%20the%20Ministry%20of,\(MW\)%20from%20all%20sources](https://www.usaid.gov/powerafrica/south-africa#:~:text=According%20to%20the%20Ministry%20of,(MW)%20from%20all%20sources); Jeffrey, L.S., “Characterisation of the coal resources in South Africa,” The South African Institute of Mining and Metallurgy, 2005, p. “South Africa Power Fact Sheet,” USAID, October 2021, available via: [https://www.usaid.gov/powerafrica/south-africa#:~:text=According%20to%20the%20Ministry%20of,\(MW\)%20from%20all%20sources](https://www.usaid.gov/powerafrica/south-africa#:~:text=According%20to%20the%20Ministry%20of,(MW)%20from%20all%20sources); L.S. Jeffrey, “Characterisation of the coal resources in South Africa,” The South African Institute of Mining and Metallurgy, vol. 105 (2005), p. 95.

<sup>13</sup> “Eskom,” Global Energy Monitor, April 2021, available via <https://www.gem.wiki/Eskom>, <https://dpe.gov.za/state-owned-companies/eskom/>; “Understanding Electricity,” Eskom Holdings, 2022, available via: <https://www.eskom.co.za/about-eskom/about-electricity/#:~:text=In%20South%20Africa%2C%20our%20most,in%20the%20northern%20Free%20State>.

<sup>14</sup> “Coal Power,” Eskom Holdings, 2022, available via: [https://www.eskom.co.za/AboutElectricity/ElectricityTechnologies/Pages/Coal\\_Power.aspx](https://www.eskom.co.za/AboutElectricity/ElectricityTechnologies/Pages/Coal_Power.aspx)

<sup>15</sup> “South Africa,” US Energy Information Administration, October 26, 2017 (accessed June 2022), available via: <https://www.eia.gov/international/analysis/country/ZAF>.

<sup>16</sup> “Zero Hour,” Centre for Environmental Rights, May 2016, available via: <https://cer.org.za/wp-content/uploads/2016/06/Zero-Hour-May-2016.pdf>; “The Destruction of Highveld,” *groundwork*, 2016, available via:

Coal mining and coal-fired electricity generation require significant volumes of water.<sup>17</sup> This is particularly problematic in a water-stressed country like South Africa, with water shortages likely to be exacerbated by climate change.<sup>18</sup> South Africa is particularly vulnerable to climate variability and change.<sup>19</sup> Climate modelling predicts that average rainfall in the country is expected to drop, which would further compound water concerns.<sup>20</sup>

In addition to industrial coal mining, artisanal miners play an important role in mining abandoned or unrehabilitated deposits, waste piles, and exposed coal seams. This work is an important source of employment in a country with unemployment rates over 35 percent.<sup>21</sup>

### Regulation and Management of Mining Activity in South Africa

Management and regulatory oversight of the mining industry falls under various national departments, in particular the Department of Mineral Resources and Energy (DMRE). DMRE is responsible for issuing mining authorizations, approving environmental impact assessments (EIA) and environmental management plans, and manages the funds companies' are required to set aside for cleanup and rehabilitation. Water management, including the issuance of water use licenses

---

<https://www.groundwork.org.za/reports/gWReport%202016.pdf>; "Coal Kills," groundwork, 2018, [https://www.groundwork.org.za/specialreports/Coal\\_Kills.pdf](https://www.groundwork.org.za/specialreports/Coal_Kills.pdf); Holland, M., "Health impacts of coal fired power plants in South Africa," groundwork, March 2017, available via: <https://lifeaftercoal.org.za/virtual-library/resources/health-impacts-of-coal-fired-power-plants-in-south-africa-2017>; Anton Eberhard, "The Future of South African Coal: Market, Investment and Policy Challenges," Program on Energy and Sustainable Development, January 2011, p. 2.

<sup>17</sup> Anna Mercè Rio Carrillo and Christoph Frei, "Water: A key resource in energy production," Energy Policy, 2009, 37(11), 4303-4312. Christoph Frei, "Water: A Key Resource in Energy Production," Energy Policy 37 (2009): 4303-4312, accessed June 1, 2022, doi: 10.1016/J.ENPOL.2009.05.074.

<sup>18</sup> "Climate Risk Country Profile: South Africa," The World Bank Group, 2021, p. 4, available via: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_o.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_o.pdf).

<sup>19</sup> Ibid., p. 5.

<sup>20</sup> 10 (note 16), available via: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_o.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_o.pdf). Ibid., p. 10, note 16.

<sup>21</sup> Olivia Kumwenda-Mtamb, "South Africa's Unemployment Rate Hits Record High Q4 2021," Reuters, March 29, 2022, (accessed June 1, 2022), [https://www.reuters.com/world/africa/south-africas-unemployment-rate-hits-new-record-high-q4-2021-2022-03-29/#:~:text=PRETORIA%2C%20March%2029%20\(Reuters\),statistics%20agency%20said%20on%20Tuesday](https://www.reuters.com/world/africa/south-africas-unemployment-rate-hits-new-record-high-q4-2021-2022-03-29/#:~:text=PRETORIA%2C%20March%2029%20(Reuters),statistics%20agency%20said%20on%20Tuesday).

and regulation of wastewater discharges, falls under the national Department of Water and Sanitation (DWS). Since 2014, the “One Environment System” was formed to ensure these government departments operate in a more unified manner.<sup>22</sup> District and local municipalities and catchment management agencies have various responsibilities related to wastewater treatment and provision of water to communities.<sup>23</sup>

---

<sup>22</sup> Tracy-Lynn Humby, “‘One Environmental System’: Aligning the Laws on the Environmental Management of Mining in South Africa.” *Journal of Energy & Natural Resources Law* 33 (2015) 110 at 123, accessed June 1, 2022, *Journal of Energy & Natural Resources Law* 33 (2015): 110 at 123, accessed June 1, 2022, doi: 10.1080/02646811.2015.1022432.

<sup>23</sup> “Mining in South Africa,” Thomson Reuters Practical Law, available via: [https://uk.practicallaw.thomsonreuters.com/w-017-7378?transitionType=Default&contextData=\(sc.Default\)&firstPage=true#:~:text=Regulatory%20authorities&text=The%20DMR's%20main%20function%20is,new%20and%20existing%20mining%20activities](https://uk.practicallaw.thomsonreuters.com/w-017-7378?transitionType=Default&contextData=(sc.Default)&firstPage=true#:~:text=Regulatory%20authorities&text=The%20DMR's%20main%20function%20is,new%20and%20existing%20mining%20activities) (June 1, 2022).

# Findings

## Risks from South Africa's Abandoned Mines

South Africa has an estimated 6,100 mines designated as “derelict and ownerless” as of 2021, an increase from the 5,906 derelict and ownerless mines reported during a previous audit in 2009.<sup>24</sup> Companies that owned mines now designated as “derelict and ownerless” are those that failed to complete the required mine closure process.<sup>25</sup> The Department of Mineral Resources and Energy (DMRE), alongside the Department of Water and Sanitation, and the Department of Forestry, Fisheries, and Environment manages the health and environmental impacts of derelict and ownerless mines.<sup>26</sup>

The pace of government action on these mines is painfully slow. In 2007, the Director of Environmental Policy in DMRE estimated that, at the then rate of progress, it would take approximately 800 years for government to rehabilitate derelict and ownerless mines at an estimated cost of R100 billion (US\$ 6.87 billion).<sup>27</sup> As of 2017, only 0.7 percent of these mines had been rehabilitated.<sup>28</sup>

Abandoned mines impact nearby communities in multiple ways. Highly acidic water laced with heavy metals can pollute surrounding ground and surface water used for household

---

<sup>24</sup> “Auditor-General Calls for Stricter Management in Rehabilitating Abandoned Mines and Mine Openings,” Auditor-General South Africa, March 31, 2022, (accessed May 23, 2022), available via: [https://www.agsa.co.za/Portals/o/Reports/Special%20Reports/2021/2022%20%20MEDIA%20STATEMENT%20\(Derelict%20and%20Ownerless%20Mines%20Performance%20Report\)%20FINAL%20\(002\).pdf?ver=2022-03-31-102059-447&timestamp=1648714873244](https://www.agsa.co.za/Portals/o/Reports/Special%20Reports/2021/2022%20%20MEDIA%20STATEMENT%20(Derelict%20and%20Ownerless%20Mines%20Performance%20Report)%20FINAL%20(002).pdf?ver=2022-03-31-102059-447&timestamp=1648714873244).

<sup>25</sup> The National Strategy for the Management of Derelict and Ownerless Mines in South Africa defines “derelict and ownerless mines” as “mines whose owners or mining rights or lease holders have abandoned and are not operating nor maintaining to mitigate and manage their associated safety, health and environmental impacts and can no longer be traced.” Department of Mineral Resources and Energy, National Strategy for the Management of Derelict and Ownerless Mines, 2009, available via: <https://cer.org.za/wp-content/uploads/2011/10/The-National-Strategy-for-the-Management-of-Derelict-and-Ownerless-Mines-in-South-Africa-2009.doc#:~:text=Derelict%20and%20ownerless%20mines%20can,can%20no%20longer%20be%20traced>.

<sup>26</sup> Ibid.

<sup>27</sup> J. Brown, “Derelict Mines to Cost State R100bn,” Business Report, 23 May 2007, p. 22; E. S. Van Druen and M. C. Bekker, “Towards an Inclusive Model to Address Unsuccessful Mine Closures in South Africa,” Journal of the Southern African Institute of Mining and Metallurgy, vol. 115 (2017), p. 485.

<sup>28</sup> Ibid.; Department of Mineral Resources and Energy, Presentation to the Portfolio Committee of Mineral Resources, February 22, 2017, available via: <https://s3-eu-west-1.amazonaws.com/s3.sourceafrica.net/documents/118407/170222DMR.pdf>.



needs.<sup>29</sup> The significant surface area of mines results in loss of productive land and increased risks for communities, including illegal settlements, that are built over the top of mining tunnels or shafts.<sup>30</sup> This loss of productive land effectively continues in perpetuity far beyond the mine's operations. There are high risks of accidents, such as injury and death, from open mine pits or shafts. For coal mines, spontaneous combustion of exposed coal seams pose additional risks.<sup>31</sup> Death of cattle and pollution of water used for irrigation also pose threats to livelihoods.<sup>32</sup>

### *Risk of Tunnel Collapses and Accidents*

South Africa's unrehabilitated mines are often located near densely populated communities that themselves grew rapidly because of the perceived opportunities that the mines presented.<sup>33</sup> Following the conclusion of mining operations, unrehabilitated sites are often left unfenced or poorly fenced, making it easy for individuals to access the mine site for recreation, artisanal mining, or for other reasons. While no data exists to precisely quantify the extent of unimpeded access at unrehabilitated mines, artisanal miners who spoke to Human Rights Watch described no restrictions on access to some former mines. A number of mines and waste piles seen by Human Rights Watch in Mpumalanga were unfenced, underscoring this ease of access.

The failure to secure abandoned mine sites places local residents, including children who have few other recreational facilities, at a greater risk of death and injury.<sup>34</sup> Deep shafts or

---

<sup>29</sup> E. Fosso-Kankeu et al., "Mobility potential of metals in acid mine drainage occurring in the Highveld area of Mpumalanga Province in South Africa: Implication of sediments and efflorescent crusts," *International Biodeterioration & Biodegradation*, April 2017, <https://www.sciencedirect.com/science/article/abs/pii/S0964830516304206>.

<sup>30</sup> "Deformation due to Mining Activities," Council for Geoscience, 2011, available via: [https://geoscience.org.za/images/geohazard/deformation\\_mining.pdf](https://geoscience.org.za/images/geohazard/deformation_mining.pdf).

<sup>31</sup> This spontaneous combustion occurs when the coal deposits come into contact with oxygen and release carbon dioxide that pollutes the ambient air. M.V. Ozdogan et al., "Preventing of Spontaneous Combustion in Coal Drifts Using a Lining Material: A Case Study of the Tunchbilek Omerler Underground Mine, Turkey," *The Journal of the Southern African Institute of Mining and Metallurgy* (2018), pp. 149-150.

<sup>32</sup> S. E. Mhlongo and F. Amponsah-Dacosta, "A Review of Problems and Solutions of Abandoned Mines in South Africa," *International Journal of Mining, Reclamation and Environment*, vol. 30 (2016), pp. 279-294.

<sup>33</sup> *Ibid.*, p. 3, note 33.

<sup>34</sup> Sne Masuku, "Two KZN Children Drown in Open Mine Clusters Abandoned by Mining Company," IOL, December 29, 2020, (accessed June 1, 2022), <https://www.iol.co.za/dailynews/news/two-kzn-children-drown-in-open-mine-clusters-abandoned-by-mining-company-48601404-ofeb-477c-be31-1dfa9757160f>; Christine Maema, "Three Children Drown in Abandoned Mine in South Africa," CGTN Africa, April 23, 2019, (accessed June 1, 2022), available via: <https://africa.cgtn.com/2019/04/23/three-children-drown-in-abandoned-mine-in-south-africa/>; Mandy De Waal, "Maandagshoek Deaths Highlight Lax Mine Safety in Rural Areas," *Daily Maverick*, January 21, 2011, (accessed June 1, 2022),

open pits, some of which are easily accessible from the surface, can fill with rainwater over many months and years. Many mining shafts are at risk of collapse and are typically not designed to last indefinitely. Mpumalanga is at particular risk given the scale of mining, with nearly 800 abandoned mines and another 235 active coal mines that will likely be closed one day.<sup>35</sup>

The government's failure to act on abandoned mines also enables artisanal miners to access mine sites, exposing them to risk of death and injury. Known as *zama zamas* in isiZulu, tens of thousands of artisanal miners in South Africa operate illegally without any mining authorizations that would require adherence to health, safety, and environmental standards.<sup>36</sup> For decades, it has essentially been an unregulated space, although first steps towards effective government regulation were taken in March 2022 with the publishing of a new policy on artisanal and small-scale mining that would formalize the industry.<sup>37</sup> For *zama zamas*, the dangers they face are not limited to the risk of collapsing mine shafts. Serious health risks, including death, can also arise from inhalation of gases that are present in coal mines, including carbon monoxide, hydrogen sulfide, or methane. These gases can also spontaneously ignite, posing serious risks.<sup>38</sup> The illicit nature of their work means accidents, injuries, or deaths are usually not reported, and family members often do not disclose the cause of death due to the stigma associated with illegal mining.

---

available via: <https://www.dailymaverick.co.za/article/2011-01-21-maandagshoek-deaths-highlight-lax-mine-safety-in-rural-areas/>.

<sup>35</sup> G. Montmasson-Clair et al., "Mpumalanga's Coal Journey is at the Crossroads," Daily Maverick, February 23, 2022, (accessed May 3, 2022) available via: <https://www.dailymaverick.co.za/article/2022-02-23-mpumalangas-coal-journey-is-at-the-crossroads-but-roads-less-travelled-and-more-diversified-lie-ahead/#:~:text=of%20toxic%20waste-,Land%20rehabilitation,coalfields%20for%20decades%20to%20come>.

<sup>36</sup> Estimates on the number of artisanal miners in South Africa range from 30,000 to 100,000. National Association of Artisanal Miners Media Statement, MACUA, 2019, available via: <https://macua.org.za/2019/10/27/national-association-of-artisanal-miners-media-statement-04-september-2019/>.

<sup>37</sup> "New Artisanal and Small-Scale Mining (ASM) and Mine Community Resettlement Guidelines: Progress, but Grey Areas Remain," Polity, April 26, 2022, accessed June 1, 2022, available via: <https://www.polity.org.za/article/new-artisanal-and-small-scale-mining-asm-and-mine-community-resettlement-guidelines-progress-but-grey-areas-remain-2022-04-26>; Ntsiki Adonisi-Kgame et al., "South Africa: Policy to Formalise Artisanal and Small-scale Mining in South Africa Published," Mondaq, April 11, 2022, accessed June 1, 2022, available via: <https://www.mondaq.com/southafrica/environmental-law/1179442/policy-to-formalise-artisanal-and-small-scale-mining-in-south-africa-published>

<sup>38</sup> Cecilia Johnson, "Lethal Toll of Informal Gold Mining" GroundUp, August 17, 2016, (accessed May 15, 2022), available at <https://www.groundup.org.za/article/lethal-toll-informal-gold-mining/>.

For example, in June 2021, the South African Police Services (SAPS) found 20 unidentified male bodies near abandoned mine shafts in Orkney and Stilfontein in the North West province.<sup>39</sup> SAPS stated that all the deceased were suspected to be illegal miners operating in obsolete shafts.<sup>40</sup>

The South African government does not keep an official record of the number of *zama zamas* that die either from collapsing shafts or from other causes. However, an independent analysis by an investigative journalist of English-language South African media coverage between 2012 and 2015 found reports of 312 deaths.<sup>41</sup> Of those deaths, at least 150 were because of collapsing tunnels, gas poisoning, suffocation, and explosives accidents.

Artisanal coal miner “Bongani” described to Human Rights Watch on September 3, 2021 the risks he faces while mining in Golfview, an abandoned mine in Mpumalanga:

“When I started at Golfview in 2015, there was always the challenge of fires, but it was still far [from where we mined]. What has always killed us is the gas. There are moments when there is no gas and we can work but when we start noticing the smell we run away and wait for a while until the gas has subsided, then go back into the shaft.”<sup>42</sup>

Bongani also described the risk of tunnel collapse while mining in Imbabala:

“When we started mining, because everything underground was coal, our approach was to mine everything out, without thinking about the fact that

---

<sup>39</sup> M. Charles, “Bodies of 20 Suspected Illegal Miners Found in the North West,” News24, June 16, 2021, (accessed June 1, 2022), available via: <https://www.news24.com/news24/southafrica/news/bodies-of-20-suspected-illegal-miners-found-in-the-north-west-20210616>; Helen Sullivan, “Bodies of 20 Suspected Illegal Miners Found Near Abandoned South Africa Goldmine,” The Guardian, June 17, 2021, (accessed June 1, 2022), available via: <https://www.theguardian.com/world/2021/jun/17/south-africa-bodies-20-suspected-miners-found-goldmine-abandoned>.

<sup>40</sup> South African Police Service, Media Statement, June 16, 2021, (accessed June 1, 2022), available via: <https://www.saps.gov.za/newsroom/msspeechdetail.php?nid=33172>.

<sup>41</sup> Cecilia Johnson, “Informal Mining Deaths,” groundup, (accessed June 1, 2022), available via: <https://www.groundup.org.za/media/uploads/documents/InformalMiningDeathsData.xlsx>. This analysis was conducted by an investigative journalist, Cecilia Johnson, and only includes English media coverage.

<sup>42</sup> Human Rights Watch interview with “Bongani,” Ermelo, September 3, 2021.

the mine company that had been here had left pillars to keep the ground from caving in... we mined everything, and we would start closest to the exit and that's what caused there to be a lot of deaths in Imbabala.”

Three *zama zamas* who had been mining coal in Golfview since 2011/2012 described similar risks from gas inhalation underground. One of them told Human Rights Watch:

“When you inhale it, you collapse because your joints, your whole body becomes weak – as if you’ve overdosed or you’re drunk on alcohol. The outcome of inhaling the gas is that you’ll die because it’s suffocating.”<sup>43</sup>

Restricting access to coal mines would impact the livelihoods of these informal workers. But if done with requisite foresight and planning, mine rehabilitation projects could provide significant numbers of jobs for those currently working as artisanal miners, including work related to ongoing maintenance and monitoring many years after active rehabilitation is completed, a position supported by the National Association of Artisanal Miners in September 2019.<sup>44</sup>

### Ermelo Drownings

In the town of Ermelo, Mpumalanga, the drownings of two children in 2016 underscore both the risks of accidents from unfettered access to unrehabilitated mines and government’s failure to address these risks. On September 24, 2016, 17-year-old Xolani Mthembu and his 14-year-old friend, Sifiso Yende, drowned in an abandoned mine site in Wesselton, Ermelo.<sup>45</sup>

The mining site was last owned by Imbabala Coal (Pty) Ltd (“Imbabala”). The mine

---

<sup>43</sup> Human Rights Watch interview with “Nkosi,” Ermelo, September 3, 2021.

<sup>44</sup> National Association of Artisanal Miners Media Statement, MACUA, September 4, 2019, (accessed June 1, 2022), available via: <https://macua.org.za/2019/10/27/national-association-of-artisanal-miners-media-statement-04-september-2019/>.

<sup>45</sup> Human Rights Watch interview with Florence Yende, Ermelo, May 6, 2021.

ceased operations in 2011 when the Department of Mineral Resources and Energy (DMRE) found it did not have the requisite Water Use License.<sup>46</sup> The mine site subsequently filled with rainwater. According to the Companies and Intellectual Properties Commission (CIPC), the company failed to submit required annual reports from 2014-2021 and consequently in 2018 was deregistered.<sup>47</sup>

Despite the promises made by an official from the Msukaligwa Local Municipality to the family to restrict access and provide warning signs, when Human Rights Watch visited five years later, the mine site was still completely accessible with no fence, restrictions on access, or warning signs.<sup>48</sup> Thomas Mthembu, Xolani's uncle, described the ongoing risks: "What we ask ourselves is whether this is how things should be in terms of mining law because the law speaks of 'rehabilitation' but that mine wasn't rehabilitated and there isn't even a warning sign so the children saw a swimming pool."

On August 23, 2019, following community pressure, the DMRE inspected the former mine site and issued a directive to the mining company highlighting that "the company has neglected and/or refused to contain or prevent the movement of pollutants and, as a result, has caused degradation and significant harm to the environment" and "has failed and or neglected to provide controlled access to the mining operation and has rendered the area unsafe to lives of the neighbouring communities and animal life."<sup>49</sup> It is not clear whether DMRE was aware of Imbabala's 2018 deregistration when it issued the directive.

Human Rights Watch made multiple efforts by email, phone and mail to contact Imbabala between October 31, 2021 and June 23, 2022 without success and has never received a response from the company.

---

<sup>46</sup> Magnificent Mndebele, "The Activists Who are Greening Wesselton," New Frame , January 7, 2021, (accessed June 1, 2022), available via: <https://www.newframe.com/the-activists-who-are-greening-wesselton/>; Human Rights Watch interviews with members of Khutala Care Group, Ermelo, Mpumalanga, May 2021.

<sup>47</sup> South Africa's Companies and Intellectual Properties Commission is responsible for the registration and ongoing regulation of companies in South Africa. For more information, see: <http://www.cipc.co.za/index.php/about/our-functions/>.

<sup>48</sup> Human Rights Watch last visited the site on September 3, 2021.

<sup>49</sup> Section 28 Directive issued to Imbabala Coal (Pty) Ltd. on September 26, 2019.

Ten years since the mine stopped operating, there are no visible signs that the company took steps to properly close or rehabilitate the coal mine, and the area has not been fenced-off nor have warning signs been erected to prevent access that would reduce the risk of accidents. The government has not taken any steps towards rehabilitation or limiting access either, nor did it hold Imbabala to account.

### *Acid Mine Drainage (AMD) Risks to Water*

South Africa is facing a crisis from Acid Mine Drainage (AMD), according to the Council for Scientific and Industrial Research.<sup>50</sup> This crisis has contributed to the deterioration of water quality in streams, rivers, and lakes in the last 20 years and an estimated 60 percent of river ecosystems countrywide are threatened.<sup>51</sup> In South Africa, the mining industry and the absence of properly remediated mine sites is the major contributor to AMD.<sup>52</sup>

In Mpumalanga, academic studies have shown that surface water and groundwater quality deterioration generally results from contaminated runoff from mines and agricultural lands or from AMD.<sup>53</sup> AMD is a particular risk in Mpumalanga because its coal deposits are largely found in sulfide ores which, unless carefully managed during and after a mine's operation, will pollute groundwater and surface water.<sup>54</sup> AMD occurs when sulfides in mine waste rock, tailings, or exposed mine shafts meet air and water and create sulfuric acid.<sup>55</sup>

---

<sup>50</sup> Acid Mine Drainage (AMD) is also known as Acid Rock Drainage (ARD). Pat Manders et al., "Acid Mine Drainage in South Africa," CSIR, August 2009, briefing note available via: <https://www.environment.co.za/documents/acid-mine-drainage-amd/AMD-Acid-Mine-Drainage-South-Africa-CSIR-draft.pdf>.

<sup>51</sup> "A CSIR Perspective on South Africa's Post-mining landscape," Council for Scientific and Industrial Research, April 2019, p. 16, available via: [https://www.researchgate.net/publication/332632730\\_A\\_CSIR\\_PERSPECTIVE\\_ON\\_SOUTH\\_AFRICA'S\\_POST-MINING\\_LANDSCAPE](https://www.researchgate.net/publication/332632730_A_CSIR_PERSPECTIVE_ON_SOUTH_AFRICA'S_POST-MINING_LANDSCAPE).

<sup>52</sup> Manders et al., "Acid Mine..."; T. S. McCarthy, "The Impact of Acid Mine Drainage in South Africa," *South African Journal of Science*, vol. 107 (5-6), p. 1.

<sup>53</sup> Gareth B. Simpson et al., "Competition for Land: The Water-Energy-Food Nexus and Coal Mining in Mpumalanga Province, South Africa," *Frontiers in Environmental Science* 18, June 18, 2019, (accessed June 1, 2022), available via: <https://www.frontiersin.org/articles/10.3389/fenvs.2019.00086/full>; Elvis Fosso-Kankeu et al., "Mobility Potential of Metals in Acid Mine Drainage Occurring in the Highveld Area of Mpumalanga Province in South Africa: Implication of Sediments and Efflorescent Crusts," *International Biodeterioration & Biodegradation* 119, April 2017, (accessed June 1, 2022), available via: <https://www.sciencedirect.com/science/article/abs/pii/S0964830516304206>.

<sup>54</sup> Department of Mineral Resources and Energy, *National Strategy for the Management of Ownerless and Derelict Mines*, 2009, available via: <https://cer.org.za/wp-content/uploads/2011/10/The-National-Strategy-for-the-Management-of-Derelict-and-Ownerless-Mines-in-South-Africa-2009.doc#:~:text=Derelict%20and%20ownerless%20mines%20can,can%20no%20longer%20be%20traced>.

<sup>55</sup> Eberhard, "The Future of South African Coal," p. 4.

This leads to further leaching of heavy metals into waterbodies.<sup>56</sup> During mining, operators continuously pump out water from the mine shafts to ensure unimpeded access to orebodies, but after active mining operations, pumping usually stops and rainwater fills these shafts, creating highly acidic water which can leach into groundwater or overflow in surrounding lands.<sup>57</sup>

Managing AMD is time-consuming, site-specific, technically complex, and usually expensive. It must be managed throughout the operation of a mine and for as long as there are exposed sulfide ores, there is a risk of acidification of water in contravention of water quality standards.<sup>58</sup> In practice, AMD management is typically required for decades, and well after a mine ceases operations.

AMD causes high acidity in water which can make it unfit for human consumption and can lead to high concentrations of a wide range of solutes that can adversely impact health outcomes.<sup>59</sup> The consumption of acidic water with high sulphate levels is likely to cause diarrhea and dehydration, with particularly devastating impacts on children.<sup>60</sup> High acidity in tap water risks corroding copper pipes, which can result in copper leaching into tap water, causing gastrointestinal, liver, and kidney problems when ingested by humans at

---

<sup>56</sup> John Rinaldo et al., “Acid Mine Drainage: Sources, Impacts and Prevention,” February 2017, (accessed June 1, 2022), available via:

[https://www.researchgate.net/publication/314086834\\_Acid\\_Mine\\_Drainage\\_Sources\\_Impacts\\_and\\_Prevention](https://www.researchgate.net/publication/314086834_Acid_Mine_Drainage_Sources_Impacts_and_Prevention).

<sup>57</sup> Ibid.

<sup>58</sup> This includes consideration of underlying hydrology, the humidity of the environment, the sulphide mineralogy, whether there are acid neutralising minerals present or absent in a particular site, and other factors. Report to the Inter-Ministerial Committee on Acid Mine Drainage, “Mine Water Management in the Witwatersrand Gold Fields with Special Emphasis on Acid Mine Drainage,” 2010, p. 20; Simpson et al., “Competition for Land;” “Acid Mine Drainage and Human Rights,” South African Human Rights Commission, accessed June 1, 2022, available via:

<https://www.sahrc.org.za/home/21/files/AMD%20Booklet.pdf>; Report to the Inter-Ministerial Committee on Acid Mine Drainage, “Mine Water Management in the Witwatersrand Gold Fields with Special Emphasis on Acid Mine Drainage,” 2010, p. 20, available via:

[https://www.dmr.gov.za/Portals/0/Resource%20Center/Reports%20and%20Other%20Documents/2010\\_Report\\_Interministerial%20Committee\\_Acid%20Mine%20Drainage.pdf?ver=2018-03-13-020432-273](https://www.dmr.gov.za/Portals/0/Resource%20Center/Reports%20and%20Other%20Documents/2010_Report_Interministerial%20Committee_Acid%20Mine%20Drainage.pdf?ver=2018-03-13-020432-273).

<sup>59</sup> Simpson, G., et al., “Competition for Land: The Water-Energy-Food Nexus and Coal Mining in Mpumalanga Province, South Africa,” *Frontiers in Environmental Science*, June 18, 2019, available via:

<https://www.frontiersin.org/articles/10.3389/fenvs.2019.00086/full>; “Acid Mine Drainage and Human Rights,” South African Human Rights Commission, <https://www.sahrc.org.za/home/21/files/AMD%20Booklet.pdf>

<sup>60</sup> Christine Colvin and Angus Burns, “Coal and Water Futures in South Africa,” World Wildlife Foundation, 2011, p. 46, available via: <https://www.wwf.org.za/?7000/coal-and-water-report>.

high levels.<sup>61</sup> Long-term impacts on human health include liver damage or death.<sup>62</sup> AMD can also release contaminants from ore such as arsenic, cyanide, mercury, lead, and uranium.<sup>63</sup> Even at very low doses, research has demonstrated these chemicals to be very dangerous to humans, particularly for children, causing health problems including skin irritation, kidney damage, neurological conditions, and cancer.<sup>64</sup> Cumulative exposure to these substances can cause death.<sup>65</sup>

Increased water acidity risks degraded soil quality, destruction of biodiversity, and an inability to support aquatic life.<sup>66</sup>

AMD impacts the ability of communities to access safe water for household needs including drinking water, for livestock, and to irrigate crops.<sup>67</sup> This is particularly important for farming communities or communities living in informal settlements who rely on groundwater and/or dig boreholes as their primary water sources.<sup>68</sup> For communities with municipal water systems, there is a risk that overly acidic water corrodes pipes and other water infrastructure.

With thousands of abandoned mines in sulfur-bearing ore locations, there is a very high likelihood of increasing water acidification as more rain falls enter into unmanaged mine sites with exposed sulfide ores. Ensuring that operating mines are treating AMD during operations, including regular decanting where appropriate, and ensuring that mines are

---

<sup>61</sup> Mark L. McFarland et al., “Drinking Water Problems: Corrosion,” Texas A&M AgriLife Extension, accessed May 2022, available via: <https://agrilifeextension.tamu.edu/library/water/drinking-water-problems-corrosion/#:~:text=What%20health%20problems%20can%20corrosion,liver%20and%20kidneys%20over%20time.>

<sup>62</sup> “Copper in Drinking Water,” Government of Western Australia Department of Health, accessed June 1, 2022, available via: [https://ww2.health.wa.gov.au/Articles/A\\_E/Copper-in-drinking-water](https://ww2.health.wa.gov.au/Articles/A_E/Copper-in-drinking-water).

<sup>63</sup> L. Ferris and L. J. Kotze, “The Regulation of Acid Mine Drainage in South Africa,” Potchefstroom Electronic Law Journal (2020), accessed June 1, 2022, available via: <https://core.ac.uk/download/pdf/231091532.pdf>.

<sup>64</sup> Rebecca Gardland, “Acid Mine Drainage: Can It Affect Human Health?” Quest, 2011, accessed June 1, 2022, available via: [https://researchspace.csir.co.za/dspace/bitstream/handle/10204/5793/Garland\\_2012.pdf?sequence=1&isAllowed=y](https://researchspace.csir.co.za/dspace/bitstream/handle/10204/5793/Garland_2012.pdf?sequence=1&isAllowed=y).

<sup>65</sup> World Health Organization, Guidelines for Drinking-Water Quality, March 21, 2022, available via: <https://apps.who.int/iris/rest/bitstreams/1414381/retrieve>.

<sup>66</sup> Report to the Inter-Ministerial Committee on Acid Mine Drainage, “Mine Water Management in the Witwatersrand Gold Fields with Special Emphasis on Acid Mine Drainage,” 2010, p. 21, available via: [https://www.dmr.gov.za/Portals/o/Resource%20Center/Reports%20and%20Other%20Documents/2010\\_Report\\_Interministerial%20Committee\\_Acid%20Mine%20Drainage.pdf?ver=2018-03-13-020432-273](https://www.dmr.gov.za/Portals/o/Resource%20Center/Reports%20and%20Other%20Documents/2010_Report_Interministerial%20Committee_Acid%20Mine%20Drainage.pdf?ver=2018-03-13-020432-273).

<sup>67</sup> E. S. van Eeden et al., “Legal Issues Concerning Mine Closure and Social Responsibility on the West Rand,” The Journal for Transdisciplinary Research in Southern Africa, vol. 5 (2009), p. 55.

<sup>68</sup> Ibid.



rehabilitated in line with regulatory requirements is an important way to minimize future AMD problems.<sup>69</sup>

In any degraded waterbody there may be multiple contributions to the cumulative degradation of water quality, making it more difficult to apportion responsibility to individual actors, underscoring the importance of addressing AMD at source. Once waterbodies are heavily contaminated with acidic water from multiple sources, managing AMD becomes even more complex and expensive given the difficulty of apportioning individual contributions to water quality.

### **AMD and Government Failures: The Case of Carolina**

The risks of acid mine drainage on communities and the central government's failure to address the problem is exemplified by the situation in Carolina, a town located in the heart of Mpumalanga's coal country. In January 2012, community members living in two neighbourhoods in Carolina were notified by the local municipality that they should not drink tap water because it was "not healthy for both human and animal consumption."<sup>70</sup> An investigation conducted by Mpumalanga's Tourism and Parks Agency concluded that a rainstorm on January 11, 2012 led to the release of highly acidic water, that had been accumulating in a nearby wetland for years, into the municipality's Boesmanspruit Dam.<sup>71</sup> This highly acidic water came from decanting old and abandoned coal mines.<sup>72</sup> For nine months, the approximately 17,000 residents of Carolina relied on water tankers to

---

<sup>69</sup> "What Can be Done to Prevent or Clean Up Acid Mine Drainage?," American Geosciences Institute, accessed June 1, 2022, available via: <https://www.americangeosciences.org/critical-issues/faq/what-can-be-done-prevent-or-clean-acid-mine-drainage>.

<sup>70</sup> The High Court of South Africa, *The Federation for Sustainable Environment and Others v. Minister of Water Affairs and Others*, (35672/12) ZAGPPHC 128, 2012, para. 4, available via: <http://www.saflii.org/za/cases/ZAGPPHC/2012/128.pdf>. In South Africa, a district municipality is made up of a number of local municipalities. Each has various responsibilities for service delivery. In Mpumalanga, there are three district municipalities and 17 local municipalities.

<sup>71</sup> Johann W.N. Tempelhoff et al., "The 2012 Acid Mine Drainage (AMD) Crisis in Carolina's Municipal Water Supply," *African Historical Review*, vol. 46, no. 2 (2014), p. 87.

<sup>72</sup> Decanting a mine is the pumping out of water, often rainwater, from mine shafts and open pits. *Ibid.*, pp. 10-17.

meet household needs, although there were extended periods where tankers were not refilled by the municipality.<sup>73</sup>

In 2012, legal proceedings were instituted by Lawyers for Human Rights and the Legal Resources Centre on behalf of the residents of Carolina’s Silobela neighbourhood against various national, provincial, district, and local municipalities involved in Carolina’s water management for violating the residents’ constitutional right to water.<sup>74</sup> In deciding that the case was an urgent matter, the High Court of South Africa held that because “the case relates to the constitutionally entrenched fundamental right to access to water... when fundamentally entrenched rights are violated... the matter intrinsically becomes urgent.”<sup>75</sup> The court ruled in favor of the community, finding that the government agencies had responsibilities to provide potable water in line with national standards, and that the municipality must “strive to resolve as speedily as possible the water problem in Silobela and Carolina,” and “engage actively and meaningfully with [the Silobela Concerned Community and Federation for Sustainable Environment] regarding the steps being taken to ensure potable water can be supplied through the water supply services.”<sup>76</sup>

In May 2021 – nearly nine years after the judgment – local residents told Human Rights Watch that although the local municipality initially complied with the court order by providing potable water for the community via tankers (called *JoJo* tanks),

---

<sup>73</sup> The High Court of South Africa, *The Federation for Sustainable Environment and Others v. Minister of Water Affairs and Others*, (35672/12), 2012, ZAGPPHC 128, para. 4, available via: <http://www.saflii.org/za/cases/ZAGPPHC/2012/128.pdf>.

<sup>74</sup> *Ibid.*, para. 7. The defendants were the Minister of Water Affairs; the Director General of water Affairs; Acting Chief Director General of Water Affairs in Mpumalanga; Director of Water Affairs-Water Sector Regulation and Use-Mpumalanga; MEC Co-operative Governance and Traditional Affairs, Mpumalanga; Acting Executive Mayor-the Gert Sibanda District Municipality; Municipal Manager- Gert Sibanda District Municipality; Mayor- Albert Luthuli Local Municipality; Municipal Manager- Albert Luthuli Local Municipality, and Komati Catchment Agency. Lawyers for Human Rights is an independent, non-profit, non-governmental human rights organization that work in six areas of human rights law. They employ a holistic approach to social justice and human rights enforcement that includes strategic litigation, advocacy, law reform, human rights education, and community mobilisation and support. For more information, see <https://www.lhr.org.za/>. The Legal Resources Centre’s goals are to promote justice using the Constitution, build respect for the rule of law, and contribute to socio-economic transformation within South Africa and beyond. For more information, see: <https://lrc.org.za/>.

<sup>75</sup> *Ibid.*, para 18.

<sup>76</sup> *Ibid.*, para 26, point 3.

no steps had been taken to address the systemic failings in municipal water management and the municipality no longer provided water to residents via tankers. Residents told Human Rights Watch that poor water quality has persisted. The eight residents Human Rights Watch interviewed said they were unable to drink or cook with water coming from their taps. Most of the residents interviewed complained of stomach aches after drinking the tap water, and as a result only relied on it for washing and cleaning.<sup>77</sup>

Residents of Silobela and Caropark neighbourhoods told Human Rights Watch they had to walk daily to boreholes at either Zinikeleni Secondary School, Silobela Masjid mosque in Silobela, or the Carolina mosque in Caropark to lineup and collect water for cooking and drinking. Older persons, or those with limited mobility who were unable to fetch water, had to drink their tap water despite the community knowing it is unsafe.<sup>78</sup> Hazvinei M., who has lived in Silobela since 2005, said:

“Even now the water issues have not been resolved. We have to walk to a school to collect water because the water from the taps come out dirty. Others drink the water from these taps but then complain about stomach pain.”<sup>79</sup>

Lisbet Nkosi, an older resident of Silobela added:

“The water will come out cream white and you have to leave it settle. Other times it comes out with brown/black scum and if you leave it settle, at the bottom [of the container] you’ll see how dirty that water is.”

---

<sup>77</sup> Human Rights Watch interview with Pretty Mahlangu, Silobela, May 8, 2021.

<sup>78</sup> Human Rights Watch interview with Nelisiwe Twala, Silobela, May 8, 2021.

<sup>79</sup> Human Rights Watch interview with Hazvinei M., Silobela, May 8, 2021.

Drinking such water, she explained, would cause “stomach aches that could last the whole day.”<sup>80</sup>

The town of Carolina gets its water from Nooitgedacht dam, which is fed by two rivers: Boesmanspruit and the Vaalwaterspruit.<sup>81</sup> A 2020 analysis of the water quality of the Komati Catchment by the Inkomati-Usuthu Water Catchment Agency highlighted Boesmanspruit as one of two points where water was “acidic” and not compliant with water quality standards. The analysis noted that the area “is dominated by coal mines and the high levels of sulphates are mostly attributed to active mines and defunct mines...”<sup>82</sup>

The impacts of AMD on South Africa’s water will be exacerbated by ongoing pressures on South Africa’s water supplies. According to World Bank near-term projections, even without any impacts from a deteriorating global climate from increased atmospheric greenhouse gas concentrations, the country will face water shortages as it uses its existing water resources.<sup>83</sup> Projections that account for modelled climate change impacts under a high emissions scenario are that the average annual precipitation of 456mm is likely to decrease by about 1.6mm between 2020 and 2039 and 3.7mm between 2040 to 2059.<sup>84, 85</sup> In addition to lower annual precipitation levels, climate change will increase the country’s rainfall variability, and the increase in average temperatures will make the country hotter and drier with increased likelihood and intensity of extreme weather events.<sup>86</sup>

## Government’s Failure to Ensure Proper Mine Closure

The 2002 Mineral and Petroleum Resources Development Act (MPRDA) requires mining companies to “rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the

---

<sup>80</sup> Human Rights Watch interview with Lisbet Nkosi, Silobela, May 8, 2021.

<sup>81</sup> “Annual Water Quality Status Report 2019-2020,” Inkomati-Usuthu Water Catchment Agency, 2020, p. 18.

<sup>82</sup> *Ibid.*, p. 22. This report omits the specific pH levels and merely classifies the findings as “acidic.”

<sup>83</sup> “Climate Risk Country Profile: South Africa,” The World Bank Group, 2021, p. 5, note 16.

<sup>84</sup> *Ibid.*

<sup>85</sup> *Ibid.*, p. 8.

<sup>86</sup> *Ibid.*

generally accepted principle of sustainable development.”<sup>87</sup> It also requires mining companies to set aside a financial provision adequate to cover costs of rehabilitation and to revise this amount annually.<sup>88</sup>

Government enforcement of these requirements has been grossly inadequate, making it easier for companies to evade cleanup responsibilities. A 2016 South African Human Rights Commission report concluded there is a “failure to monitor compliance, poor enforcement, and a severe lack of coordination.”<sup>89</sup> Centre for Environmental Rights (CER), an NGO that advocates and litigates for environmental justice in South Africa, reported that DMRE “either ignores complaints of violations by mining companies or refuses to get involved in any enforcement action, despite reports of non-compliance.” CER reports, based on a series of information requests under the Promotion of Access to Information Act (PAIA), that despite having 235 registered mines, Mpumalanga’s regional office has just ten Environmental Mineral Resource Inspectors (EMRI) as of March 2019.<sup>90</sup> EMRIs undertake environmental compliance monitoring and enforcement.

Things aren’t much better at the Department of Water and Sanitation, which is responsible for issuance of, and compliance with, water licenses. In July 2014, 103 mines in South Africa were operating without water use licenses, yet the Department of Water and Sanitation (DWS) brought only 12 enforcement actions and there were no convictions from the six actions that led to criminal prosecutions.<sup>91</sup>

---

<sup>87</sup> Mineral and Petroleum Resources Development Act, 2002, Art. 38.

<sup>88</sup> *Ibid.*, Art. 41.

<sup>89</sup> National Hearing on the Underlying Socio-Economic Challenges of Mining-Affected Communities in South Africa, Human Rights Commission, September-November 2016, available via: <https://www.sahrc.org.za/home/21/files/SAHRC%20Mining%20communities%20report%20FINAL.pdf>.

<sup>90</sup> “Environmental Compliance Monitoring and Enforcement at Mines: The Department of Mineral Resources and Energy’s Performance During the Financial Years 2017 to 31 March 2019,” Centre for Environmental Rights, p. 1, available via: <https://cer.org.za/wp-content/uploads/2020/12/DMRE-Environmental-CME-performance-FY2017-2019.pdf>. In a May 2022 parliamentary report DMRE highlighted the challenge: “it faced regarding mine inspections and the rehabilitation of Derelict and Ownerless mines” stating that “with only 120 mine health and safety inspectors currently employed, the department cannot effectively cover all the mines in all 9 provinces.” Report of the Select Committee on Land Reform, Environment, and Mineral Resources and Energy on the Budget Vote and Annual Performance Plan 2022/23 of the DMRE, Parliamentary Monitoring Group, Budget Vote No. 34, May 5, 2022, available via: <https://pmg.org.za/taled-committee-report/4891/>.

<sup>91</sup> “Zero Hour,” Centre for Environmental Rights, May 2016, available via: <https://cer.org.za/wp-content/uploads/2016/06/Zero-Hour-May-2016.pdf>.

DMRE's enforcement capacities may also be constrained by its potentially contradictory mandates of promoting South African mining development while simultaneously ensuring compliance with environmental requirements.

The lack of enforcement means that mining companies can, in practice, easily disregard the law with no consequences on their ability to operate, including on issues around mine closure requirements. Lack of both enforcement action and costs for noncompliance provide little incentive to comply with many permit conditions or to undertake remediation that would enable an application for a closure certificate.

Human Rights Watch reviewed data on the mine closure certificates granted by DMRE between 2011 and 2016, acquired through a 2015 information request by an investigative journalist. Closure certificates can be granted upon completion of rehabilitation in line with government requirements. Of 445 closure certificates issued country-wide, only six were in Mpumalanga, none of which were for coal mines.<sup>92</sup>

Once a mine is abandoned, it is unlikely to be cleaned up, although there are legal mechanisms to try to ensure clean-up will happen.<sup>93</sup> A scathing 2022 report on abandoned mines from South Africa's Auditor General found that just 27 mines, all asbestos, out of 2,322 "high-risk commodity mines," including coal, had not been rehabilitated between 2009 and 2021. It also found that the average number of mines rehabilitated in a year, even though it had increased from 1.67 mines in 2009 to 2.25 mines in 2021, was so negligible that it barely makes a dent in the thousands of unrehabilitated mines.<sup>94</sup>

---

<sup>92</sup> The six closure certificates were granted to the following entities: three closure certificates to B&E International Pty Ltd, business includes mining or quarrying crushed and broken stone; one closure certificate to the South African National Roads Agency SOC Ltd (SANRAL); one closure certificate to Department of Water Affairs and Forestry; and one closure certificate to Hectorspruit Sand & Klip (a sand, gravel, stone mining company). Ministry of Mineral Resources, Republic of South Africa, NA Response to Question 1185, April 22, 2016, available via: <https://pmg.org.za/files/RNW1185-160510.docx>; M. Olalde, "R60-Billion Held for Mines that are Never Closed," *Oxpeckers*, May 17, 2017, accessed June 1, 2022, available via: <https://oxpeckers.org/2017/05/r60-billion-held-mines-never-closed/>.

<sup>93</sup> Where the holder of a mining right cannot be traced or the legal entity has been liquidated or ceases to exist, the Minister can direct a Regional Manager of the DMRE to take the necessary steps to prevent further ecological degradation or water pollution, using the financial provision set aside by the original holder of the mining right. Where the funds are inadequate, money appropriated from Parliament for rehabilitation can be utilised. Section 36(a)(1) and (2) of the MPRDA.

<sup>94</sup> Ed Stoddard, "DMRE's Failure to Rehabilitate Abandoned Mines Poses Health Risks to Communities," *The Daily Maverick*, March 30, 2022, accessed June 1, 2022, available via: <https://www.dailymaverick.co.za/article/2022-03-30-dmres-failure-to-rehabilitate-abandoned-mines-poses-health-risks-to->

Globally, many international mining and/or energy companies are divesting from coal, recognizing diminished future demand for coal, the risk of coal mines becoming stranded assets, and, in some cases, the reputational risks of holding coal assets.<sup>95</sup> In South Africa, some international companies have sold off coal assets to smaller South African-owned mining companies.<sup>96</sup> Closure liabilities are transferred to the small companies.<sup>97</sup> These sales are sometimes framed as contributing to the empowerment of local South African companies to share in the nation’s mineral wealth.<sup>98</sup> Divesting from coal mines before rehabilitation could also enable international companies to boost sustainability credentials while avoiding costly environmental clean-up obligations.

Many of these mines are sold to smaller companies as the most lucrative deposits are depleted and the mine nears the end of its life, with limited future revenue streams.<sup>99</sup> The lack of long-term revenue potential makes it even more difficult to justify in an economic sense – an expensive rehabilitation in line with government standards. Smaller mining

---

communities/#:~:text=%E2%80%9CIn%20this%20latest%20audit%2C%20the,within%20a%20set%20time%20frame.%E2%80%9D; Auditor General South Africa, “Auditor-General.”

<sup>95</sup> “Nedbank Emerges as Clear Leader in Climate Risk Management,” JustShare, May 12, 2020, accessed June 1, 2022, available via: <https://justshare.org.za/media/news/nedbank-emerges-as-clear-leader-in-climate-risk-management>.

<sup>96</sup> “Warning Around Anglo American’s Sale of Coal Mines: Transparency Essential to Avoid Downstream Disaster,” Centre for Environmental Rights, April 25, 2017, accessed June 1, 2022, available via: <https://cer.org.za/news/warning-around-anglo-americans-sale-of-coal-mines-transparency-essential-to-avoid-downstream-disaster>; “Thungela Resources Ltd: Drowning in liabilities?” The Boatman Capital Research, June 2021, accessed June 1, 2022, available via: <https://theboatmancapital.com/2021/06/02/thungela-resources-ltd-drowning-in-liabilities/>; “South32 Expects Loss of Up to \$175 Million from South African Coal Unit Sale,” Reuters, May 17, 2021, <https://www.reuters.com/world/africa/south32-expects-loss-up-175-mln-safrican-coal-unit-sale-2021-05-17/>; “South32 to pay clean-up costs to close South African coal unit sale,” Reuters, April 1, 2021, accessed June 1, 2022, available via <https://www.reuters.com/article/us-south32-coal-idUSKBN2BO4BF>. The report notes that the money being provided by South32 for environmental clean-ups is “less than a quarter of the roughly US\$875 million in closure liabilities.”

<sup>97</sup> Email response to questions posed by Human Rights Watch, T. Mukwevho, September 12, 2021; S. E. Mhlongo and F. Amponsah-Dacosta, “A Review of Problems and Solutions of Abandoned Mines in South Africa,” *International Journal of Mining, Reclamation and Environment*, vol. 30, no. 4 (2016), pp. 279-294, available via: <http://saimm.org.za/Journal/v103no8p483.pdf>; Herbert Smith Freehills, “In Brief: Mining Rights and Title in South Africa,” May 27, 2021, accessed June 1, 2022, available via: <https://www.lexology.com/library/detail.aspx?g=c222bee7-0a38-4ce1-a0df-b6f8fd84cb3f>.

<sup>98</sup> Andries Mahlangu and Lisa Steyn, “Exxaro Sells Three Coal Mining Operations to BEE Group,” *BusinessLive*, April 2021, accessed June 1, 2022, available via: <https://www.businesslive.co.za/bd/companies/mining/2021-04-09-exxaro-sells-three-coal-mining-operations-to-bee-group/>; Sibongile Khumalo, “‘Transformation Milestone’: South32 Says it Set Out to Sell Coal Assets to Black-Owned Entity,” *News24*, May 19, 2021, accessed June 1, 2022, available via: <https://www.news24.com/fin24/companies/mining/transformation-milestone-south32-says-it-set-out-to-sell-coal-assets-to-black-owned-entity-20210519>.

<sup>99</sup> Email response to questions posed by Human Rights Watch, T. Mukwevho, September 12, 2021; Mhlongo and Amponsah-Dacosta, “A Review of Problems,” pp. 279-294.

companies also generally lack the experience and expertise required to properly rehabilitate the mine.<sup>100</sup>

Despite the clear lack of progress in rehabilitating mines, nearly R60 billion (\$3.9 billion) was being held in May 2017 for mining rehabilitation by DMRE, but not being used because of regulatory constraints.<sup>101</sup> For example, these funds can only be used for rehabilitation once a mine has initiated a closure process or the DMRE has declared the mine abandoned. In practice, neither of these things happen very frequently.<sup>102</sup> Very few mines are designated abandoned, in part because there are no known criteria to guide DMRE in assessing whether mines should be classified as abandoned, as it is plausible that mines that cease operations but have not applied for a closure certificate could restart at some point in the future.<sup>103</sup>

### *Inadequate Financial Provisions*

The amounts companies are required to set aside with DMRE for rehabilitation at the time mining authorizations are granted are sometimes far below the actual cost of remediation, which can be tens of millions of dollars.<sup>104</sup> According to the South African Human Rights Commission (SAHRC), one of the reasons financial provisions held for cleanups are so inadequate is that the government does not have any prescriptive standards to calculate financial liability, leaving mining companies to calculate their own closure costs. One of the consequences of not having a standardised approach is that the “quantum for proper closure is grossly underestimated.”<sup>105</sup> In addition, the government rarely enforces the

---

<sup>100</sup> Ibid.

<sup>101</sup> These funds come from the various security deposits that are submitted by mining rights holders to DMRE as security for mining rehabilitation. Olalde, “R60-Billion.”

<sup>102</sup> For example, PAIA request made between 2011-2016 did not find a single example of a large scale mine bring granted a closure certificate countrywide. I. Watson and M. Olalde, “The State of Mine Closure in South Africa - What Numbers Say,” *Journal of the Southern African Institute of Mining and Metallurgy*, July 2019, accessed June 1, 2022, available via: [http://www.scielo.org.za/scielo.php?script=sci\\_arttext&pid=S2225-62532019000700008](http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2225-62532019000700008).

<sup>103</sup> Typically, the financial security submitted when the mining right was applied for is of such a low amount that mine owners are happy to relinquish it rather than undertaking the far more expensive remediation.

<sup>104</sup> “Financial Provisions for Rehabilitation and Closure in South African Mining,” World Wildlife Fund, 2012, available via: [http://awsassets.wwf.org.za/downloads/wwf\\_mining\\_8\\_august\\_low\\_res.pdf](http://awsassets.wwf.org.za/downloads/wwf_mining_8_august_low_res.pdf).

<sup>105</sup> “National Hearing on the Underlying Socio-economic Challenges of Mining-affected Communities in South Africa,” South African Human Rights Commission, November 2016, available via: <https://www.sahrc.org.za/home/21/files/SAHRC%20Mining%20communities%20report%20FINAL.pdf>



requirement that ensures the company annually reviews closure needs as mining operations evolve and shift as they naturally do over time and to account for inflation.<sup>106</sup> All of this can provide incentives to companies to submit financial provisions that are “grossly underestimated.”<sup>107</sup>

The history of Imbabala Coal (Pty) Ltd, which owned Imbabala coal mine in Ermelo, illustrates the problems of inadequate funds being set aside for rehabilitation. As part of its application for a mining authorization for its Ermelo coal mine, Imbabala Coal (Pty) Ltd submitted a financial provision of just R600,000 (approximately \$92,000) in 2005 to cover costs of rehabilitation. This amount was never increased as the mine was further developed, despite a requirement to revisit estimated cleanup costs annually.<sup>108</sup> Following a 2019 community-led campaign to address the legacy of Imbabala’s unrehabilitated coal mine, DMRE assessed the cost of remediation at R450 million (S\$31 million), 750 times the amount DMRE had received 14 years earlier as a security.<sup>109</sup>

Due to a failure to submit required annual reports to the Companies and Intellectual Properties Commission (CIPC), Imbabala Coal (Pty) Ltd was deregistered in 2018.<sup>110</sup> It is not clear if DMRE was aware of this deregistration prior to issuing its 2019 directive. At the time of writing, DMRE has provided no response to our correspondence requesting information on the steps taken to ensure compliance. Human Rights Watch wrote to Imbabala on October 31, 2021 and June 14, 2022 and received no response at the time of writing.

For Ermelo’s Golfview mine there is no evidence the company provided any financial provision to DMRE whatsoever, nor that the company took any steps to rehabilitate the

---

<sup>106</sup> Ibid.

<sup>107</sup> National Hearing on the Underlying Socio-Economic Challenges of Mining-Affected Communities in South Africa, South African Human Rights Commission, August 2018, p. 28, available via: <https://www.sahrc.org.za/home/21/files/SAHRC%20Mining%20communities%20report%20FINAL.pdf>.

<sup>108</sup> Requirement is contained in Regulations Pertaining to the financial provisioning for prospecting, exploration, mining or production operations under the National Environmental Management Act. “Mine closures and financial provisions for rehabilitation,” Africa Open Data, 2018, available via: <https://africaopendata.org/dataset/mine-closures-financial-provisions>.

<sup>109</sup> Section 28 Directive issued to Imbabala Coal (Pty) Ltd on September 26, 2019.

<sup>110</sup> The Companies and Intellectual Properties Commission (CIPC) is responsible for the registration of companies. For more information, see: <http://www.cipc.co.za/index.php/about/our-functions/>.

environmental degradation caused by its operations.<sup>111</sup> In 2015, Golfview Mining (Pty) Ltd began business rescue proceedings.<sup>112</sup> In Golfview's September 2015 Business Rescue Plan, its environmental liability was an estimated R29 million (\$2 million), but the rehabilitation reserve Anker Coal and Mineral Holdings South Africa had set aside in a trust amounted to just R4.2 million (\$286 587).<sup>113</sup> Human Rights Watch wrote to Golfview on November 12, 2021 and June 14, 2022 and received no response at the time of writing.

### *Government's Response*

Recognising the need to tackle the abandoned mine problem, the Minister of Minerals and Energy published the draft of the National Mine Closure Strategy in May 2021.<sup>114</sup> It marked an important step toward ensuring the safety and the socio-economic and environmental impacts of mine closures are managed in a more integrated way and that mine closures are no longer dealt with in a manner divorced from their cumulative impacts on communities. However, civil society organizations have expressed concern regarding “the implementation and enforcement... given the track record of implementation of previous mine closure strategies.” This concern stems from the fact that the draft National Mine Closure Strategy continues to take a reactive approach to the mine closure process.<sup>115</sup>

---

<sup>111</sup> Golfview Mining (Pty) Ltd is owned by Anker Coal and Mineral Holdings South Africa, which is in turn part of Netherlands-based Anker Group B.V. Department of Mineral Resources, Mines Operating in Mpumalanga, available via: <https://www.dmr.gov.za/mineral-policy-promotion/operating-mines/mpumalanga>.

Data on mine closures and financial provisions for rehabilitation available via: <https://africaopendata.org/dataset/mine-closures-financial-provisions>.

<sup>112</sup> Business rescue proceedings are a route for companies in financial distress to go through restructuring before they resort to liquidation.

<sup>113</sup> Golfview Mining (Pty) Ltd Business Rescue Plan, 2015, p. 15, available via: <https://s3-eu-west-1.amazonaws.com/s3.sourceafrica.net/documents/117900/202-20150914-20Business-20Rescue-20Plan-Golfview.pdf>.

At the time Golfview entered business rescue, its coal reserves were approximately 6,760,000 tons. These reserves continue to be mined by zama zamas. If Golfview's mining rights are purchased, the company's environmental liability will be transferred to the purchaser. Should it not find a purchaser or if the company becomes liquidated, the balance of the environmental liability will fall on government. In the meantime, there are no restrictions on access, no attempts to mitigate risks of the unrehabilitated mine, and no efforts to clean up the mine site.

<sup>114</sup> South Africa Department of Mineral Resources and Energy, Mineral and Petroleum Resources Development Act, 2002, Draft National Mine Closure Strategy Government Gazette No. 44607 available via: [https://www.gov.za/sites/default/files/gcis\\_document/202105/44607gen446.pdf](https://www.gov.za/sites/default/files/gcis_document/202105/44607gen446.pdf). More on this strategy can be found in Government Response section. The objectives of the Strategy include managing the closure of mines “in an integrated and sustainable manner, hence ensuring that these mines work together to achieve a self-sustaining ecosystem after closure” and ensuring that “water is more efficiently managed and valued and to develop a post closure mine water strategy for an area.”

<sup>115</sup> Centre for Applied Legal Studies, “Submission to the Department of Mineral Resources and Energy on the Draft Mine Closure Strategy,” July 23, 2021, p. 5. The comment period for the strategy closed in July 2021.

In addition to the strategy, on August 27, 2021, the government published draft regulations on financial provisions for mine rehabilitation for public comment.<sup>116</sup> The regulations are aimed at ensuring the state “does not become liable for the costs of mitigation rehabilitation and management of negative environmental impacts and environmental damage” and to ensure that mining rights holders and applicants fulfil their obligation “to mitigate and rehabilitate environmental damage caused by the entire life cycle of the mining process.”<sup>117</sup>

The draft does not require government consent before a mining right is transferred or ceded from one entity to another.<sup>118</sup> The effect of this is that there would continue to be no government assessment of whether the entity in whose favor the transfer or cession is occurring is capable of carrying out the obligations, including mine rehabilitation.<sup>119</sup>

South African civil society organizations have correctly underscored the importance of independent specialists in determining the financial provisions set aside and that these provisions be reviewed over time to ensure the provisions set aside are adequate. This is critical because of the significant time lapse between when the financial provision is determined and when the mine closure process is initiated, given that mine development will most likely have changed since the time authorization was applied for and inflation is not considered.<sup>120</sup>

---

<sup>116</sup> Department of Forestry, Fisheries and the Environment, National Environmental Management Act, 1998 (Act 107 of 1998). Proposed Regulations pertaining to financial provisioning for the mitigation and rehabilitation of environmental damage caused by reconnaissance, prospecting, exploration, mining or production operations. Government Gazette No. 45058: 765, August 27, 2021. Hereafter “Proposed regulations pertaining to financial provision.”

<sup>117</sup> Regulation 2(a)(d) of the Proposed regulations pertaining to financial provision.

<sup>118</sup> Transferring, ceding, or subletting of a mining or prospecting right is done in terms of section 11 of the Mineral and Petroleum Resources Development Act 28 of 2002.

<sup>119</sup> Mineral Petroleum and Resources Development Act, Section 11(2), Act 28 of 2002.

<sup>120</sup> Comments on the Draft Financial Regulations, Center for Environmental Rights and Others, October 2021, paragraphs 27.7 and 27.8, available via: [https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-](https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments_6%20October%202021.pdf)

[entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments\\_6%20October%202021.pdf](https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments_6%20October%202021.pdf). For an overview of CER’s views on the draft provisions, see:

<https://cer.org.za/news/what-you-should-know-about-proposed-new-rules-for-financial-provision-for-mining-rehabilitation>

Comments on the Draft Financial Regulations, Centre for Environmental Rights and Others, October 2021, paragraphs 27.7 and 27.8, available via: [https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-](https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments_6%20October%202021.pdf)

[entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments\\_6%20October%202021.pdf](https://www.wits.ac.za/media/wits-university/faculties-and-schools/commerce-law-and-management/research-entities/cals/documents/programmes/environment/resources/CER%20and%20Others%20Financial%20Provisioning%20Comments_6%20October%202021.pdf). For an overview of CER’s views on the draft provisions, see:

<https://cer.org.za/news/what-you-should-know-about-proposed-new-rules-for-financial-provision-for-mining-rehabilitation>.

Human Rights Watch wrote to the Department of Mineral Resources and Energy on October 30, 2021 asking for a response to the findings of this report, including clarification on timelines related to the draft regulations on financial provisions and the draft mine closure policy. No response was received at time of writing. This correspondence can be found in the Annex.

## Access to Information

Basic information about water quality or abandoned mines is not publicly available or is badly outdated. This leaves communities, including those in Mpumalanga, ill-equipped to understand risk or to ask informed questions to government about how the government is addressing risk.

In Carolina, for example, several interviewees described how they had no information about the quality of their drinking water nor about how the local municipality was planning to improve service delivery. No one Human Rights Watch interviewed knew of any way to access this information.

The Auditor General in a 2022 report also raised concerns about DMRE's collection of data on derelict and ownerless mines: "As a result of the department's inadequate capacity, systems and funds, the D&O mines database had not been regularly updated... and the database contains errors, resulting in data being inaccurate, outdated and incomplete."<sup>121</sup>

The Promotion of Access to Information Act (PAIA) was intended to facilitate community access to critical information held by government authorities, but in practice this promise has not been fulfilled.<sup>122</sup> The act stipulates that requests for information should be communicated to the requesting party "as soon as reasonably possible" and within 30 days maximum.<sup>123</sup> Should the information officer fail to give a decision within this period,

---

<sup>121</sup> Auditor-General South Africa, "Auditor-General."

<sup>122</sup> Promotion of Access to Information Act, South African Government, 2002, available via: <https://www.gov.za/documents/promotion-access-information-act#:~:text=The%20Promotion%20of%20Access%20to,provide%20for%20matters%20connected%20theretith>. Hereafter "PAIA".

<sup>123</sup> Section 25(1) of the Promotion of Access to Information Act, South African Government, 2 of 2002, available via: <https://www.gov.za/documents/promotion-access-information->



On July 2, 2021, Human Rights Watch submitted a request for reports on post-closure rehabilitation monitoring and maintenance of derelict and ownerless mines across South Africa, including reports on field investigations to these mines and information regarding the criteria used to rank the risks posed by the ownerless and derelict mines. Ten months after the request was submitted, and nine months after a decision is mandated by legislation, no outcome has been communicated by the DMRE.

In September 2020, the Pretoria High Court found that communities had the right to access information and have a right to see applications for mining licenses that might impact them. Previously communities had to go through PAIA to access information on applications for mining licenses, often facing rejections.<sup>126</sup>

South Africa has not ratified the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, commonly known as the Aarhus Convention.<sup>127</sup>

---

<sup>126</sup> Daily Maverick, “Game-Changing Xolobeni Judgment Orders Applications for Mining Licences to be Made Public,” September 14, 2020, accessed June 1, 2022, available via: <https://www.dailymaverick.co.za/article/2020-09-14-game-changing-xolobeni-judgment-orders-applications-for-mining-licences-to-be-made-public/>; Full decision: <http://www.saflii.org/za/cases/ZAGPPHC/2018/829.html>.

<sup>127</sup> United Nations Treaty Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998, available via: [https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg\\_no=XXVII-13&chapter=27](https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13&chapter=27). No state in Africa has ratified the treaty.

# South Africa's Domestic, Regional, and International Human Rights Obligations

The South African government has obligations under international human rights law to respect, protect, and fulfil fundamental human rights, such as the rights to health and water, the right to information, to protection of the home and family, and the right to a healthy environment. Amongst those obligations is the obligation to protect against abuses by third parties, including businesses such as mining companies, through effective regulation of company behavior to prevent harm to individuals and communities.<sup>128</sup> In addition, businesses have responsibilities to respect human rights, which governments are obligated to enforce through appropriate legislative, administrative, and judicial means, including access to an effective remedy if business related abuses occur.<sup>129</sup>

## Right to Water

The South African government has international human rights obligations to respect, protect, and fulfil the right to water.<sup>130</sup> This right includes “access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use.”<sup>131</sup> While the African Charter on Human and Peoples’ Rights (ACHPR) does not expressly include the right to water, it is implied in the protection of rights such as the right to life, dignity, health, economic, social, and cultural development.<sup>132</sup> In 2019, the Guidelines on

---

<sup>128</sup> Human Rights Committee, General Comment No. 31, The Nature of the General Legal Obligation Imposed on States Parties to the Covenant, UN Doc CCPR/C/21/Rev.1/Add. 13, para 7; Committee on Economic, Social and Cultural Rights, General Comment No. 20, Non-Discrimination in Economic, Social and Cultural Rights, UN Doc E/C.12/GC/20, para 11.

<sup>129</sup> UN Human Rights, Office of the High Commissioner, “Guiding Principles on Business and Human Rights,” HR/PUB/11/04, adopted June 16, 2011, pp. 3-4, available via: [https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr\\_en.pdf](https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf).

<sup>130</sup> International Covenant on Economic, Social and Cultural Rights, Arts 11 and 12, December 16, 1966, (entered into force: January 3, 1976, signed by South Africa: October 3, 1994, and ratified on January 18, 2015); General Comment No. 15. “The Right to Water,” UN Committee on Economic, Social and Cultural Rights, November 2002, Art 20; UN General Assembly, “The Human Right to Water and Sanitation,” Resolution adopted by the General Assembly, July 28, 2010, A/RES/64/292.

<sup>131</sup> UN Human Rights Council, “The Human Right to Safe Drinking Water and Sanitation: Resolution Adopted by the Human Rights Council,” A/HRC/RES/16/2, April 8, 2011, accessed May 2, 2022, available via: <https://www.refworld.org/docid/4dc108202.html>.

<sup>132</sup> “African Convention on Human and People’s Rights, Principles and Guidelines on the Implementation of Economic, Social and Cultural Rights in the African Charter on Human and Peoples’ Rights,” para 87, available via: <https://archives.au.int/handle/123456789/2063>.

the Right to Water in Africa were adopted by the African Commission to provide further guidance for states on how to ensure access to safe, affordable, and sufficient water. This right is also explicitly recognised in section 27 of the South African Constitution.<sup>133, 134</sup>

The South African government is obligated to establish appropriate laws and regulations to protect individual's enjoyment of the right to water from interference, and in particular abuse, by corporate activities and to ensure companies demonstrate due diligence.<sup>135</sup> The right to water in South Africa is in part given effect to through the National Water Act of 1998 (NWA), which is administered by the Department of Water and Sanitation (DWS).

## Right to Health

The right to the highest attainable standard of health, first set out in the Universal Declaration of Human Rights, is guaranteed in multiple international treaties to which South Africa is party, including the International Covenant on Economic, Social and Cultural Rights (ICESCR), the Convention on the Rights of the Child (CRC), and the African Charter on Human and Peoples' Rights.<sup>136</sup> The right includes a right of access to health care, but also extends to protecting the underlining determinants of health, including against environmental degradation.<sup>137</sup>

The Committee on Economic, Social and Cultural Rights (CESCR) – which interprets and monitors compliance with the ICESCR has – interpreted the ICESCR to include both “[t]he requirement to ensure an adequate supply of safe and potable water and basic sanitation”

---

<sup>133</sup> “Guidelines on the Right to Water: Adopted during the ACHPR’s 26th Extraordinary Session in Banjul, the Gambia,” African Commission on Human and Peoples’ Rights, July 2019, available via: <https://www.achpr.org/legalinstruments/detail?id=71>.

<sup>134</sup> According to section 27(1)(b) of the Constitution of the Republic of South Africa, 1996 “Everyone has the right to have access to sufficient food and water.”

<sup>135</sup> Statement on the obligations of States Parties regarding the Corporate Sector and Economic, Social and Cultural Rights; United Nations, Economic and Social Council E/C.12/2011/1, Office of the United Nations High Commissioner for Human Rights.

<sup>136</sup> Universal Declaration of Human Rights, 1948, art. 25; International Covenant on Economic, Social and Cultural Rights, General Assembly resolution 2200A (XXI) of December 16, 1966, entry into force January 3, 1976, ratified by South Africa on January 12, 2015; Convention on the Rights of the Child (CRC), adopted November 20, 1989, G.A. Res. 44/25, annex, 44 U.N. GAOR Supp. (No 49) at 167, U.N. Doc. A/44/49 (1989), entered into force September 2, 1990, ratified by South Africa on June 16, 1995, African [Banjul] Charter on Human and Peoples’ Rights (ACHPR), adopted June 27, 1981, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), entered into force October 21, 1986, ratified by South Africa on July 9, 1996.

<sup>137</sup> Substantive Issues Arising in the Implementation of the ICESCR, General Comment No. 14, paras. 11, 15. Section 27(1)(a) of the Constitution of the Republic of South Africa, 1996.



and “the prevention and reduction of the population’s exposure to harmful substances such as radiation and harmful chemicals or other detrimental environmental conditions that directly or indirectly impact upon human health.”<sup>138</sup> It further states that governments have an obligation to provide “information concerning the main health problems in the community, including methods of preventing and controlling them.”<sup>139</sup>

Section 27 of South Africa’s constitution also provides that “everyone has the right to have access to health care services.”

## Right to a Healthy Environment

The United Nations Human Rights Council formally recognised the human right to a clean, healthy, and sustainable environment on October 8, 2021.<sup>140</sup>

Several regional human rights instruments also explicitly articulate a right to a healthy environment. For example, the ACHPR recognises the right of peoples to “a general satisfactory environment favourable to their development.”<sup>141</sup>

Under South African law, the right to a healthy environment is guaranteed in section 24 of the constitution. The Constitution further states that “everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation.”<sup>142</sup>

The constitutional right to a healthy environment is in part given effect through the Mineral and Petroleum Resources Development Act of 2002 (MPRDA), administered by the

---

<sup>138</sup> Substantive Issues Arising in the Implementation of the ICESCR, General Comment No. 14, para. 15.

<sup>139</sup> Ibid., para. 44(d).

<sup>140</sup> “Access to a Healthy Environment Declared a Human Right by UN Rights Council,” UN News, October 8, 2021, accessed June 1, 2022, available via: <https://news.un.org/en/story/2021/10/1102582>.

<sup>141</sup> African Commission on Human and People’s Rights, Art. 24.

<sup>142</sup> Constitution of the Republic of South Africa, 1996, Section 24(b)(i). The Constitutional right to a healthy environment is given effect to through the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) and administered by the Department of Mineral Resources and Energy (DMRE), the National Environmental Management Act, 1998 (NEMA) is administered by the Department of Forestry, Fisheries and Environment, and the right to water is given effect to through the National Water Act, 1998 (NWA) and the Act is administered by the Department of Water and Sanitation (DWS).

Department of Mineral Resources and Energy (DMRE), and the National Environmental Management Act of 1998 (NEMA), administered by the Department of Forestry, Fisheries and Environment.

## Acknowledgments

This report was researched and written by Vuyisile Ncube, fellow in the Environment and Human Rights division at Human Rights Watch, with additional research by Cara Schulte, Senior Associate in the Environment and Human Rights division, and Felix Horne, Senior Researcher in the Environment and Human Rights division, who also reviewed the report.

The report was reviewed by Richard Pearshouse, Director of the Environment and Human Rights division; Jim Wormington, Senior Researcher in the Business and Human Rights division; Kyle Knight, senior health and human rights researcher; Mausi Seguin, Executive Director, Africa division; Juliane Kippenberg, Associate director, Children's Rights division. Aisling Reidy, Senior Legal Advisor, and Babatunde Olugboji, Deputy Program Director, provided legal and program review for Human Rights Watch.

Additional review was provided by Tarisai Mugunyani, Attorney in the Mining Program of the Centre for Environmental Rights.

The report was prepared for publication by Travis Carr, Senior Publications Coordinator. Hellen Huang, Associate in the Environment and Human Rights division, provided production assistance and support.

We would like to thank the members of Khuthala Environmental Care Group and residents in the communities of Wesselton, Caropark, and Silobela. In particular, we would like to thank: Philani Mngomezulu and Zethu Hlatshwayo, co-founders of the Khuthala Environmental Care Group, Florence 'Yende' Filane, and Albert Nzimande.

We also express our appreciation for South African NGO colleagues, lawyers, researchers and experts, in particular, the Federation for a Sustainable Environment, Association for Water and Rural Development, and Lorraine Kakaza from WoMin, who provided information for this report. Additionally, we are grateful to the following staff from the Centre for Environmental Rights for their contribution, insight and expertise: Thobeka Gumede, Attorney in the Mining Program; Tatenda Muponde, Attorney in the Mining Program; and Dimakatso Sefatsa, Candidate Attorney in the Mining Program.

Most importantly, Human Rights Watch is deeply grateful to all the courageous community members who so generously shared their stories with us.

# Annex

## Letter from Human Rights Watch to the Department of Mineral Resources and Energy, South Africa, October 30, 2021

350 Fifth Avenue, 34<sup>th</sup> Floor  
New York, NY 10118-3299  
Tel: +1-212-290-4700  
Fax: +1-212-736-1300; 917-591-3452

Kenneth Roth, Executive Director

**DEPUTY EXECUTIVE DIRECTORS**

Tirana Hassan, *DED/Chief Programs Officer*  
Wista Heneghan, *DED/Chief Operating Officer*

Michele Alexander, *Chief Development Officer*

Alan Feldstein, *General Counsel (Acting)*

Mel Fong, *Chief Communications Officer*

Colin Minzy, *Chief People Officer*

James Powell, *Chief Technology Officer*

James Ross, *Legal and Policy Director*

Bruno Stagno Ugarte, *Chief Advocacy Officer*

**DIVISION AND PROGRAM DIRECTORS**

Brad Adams, *Asia*

Nicole Austin-Hillery, *United States*

Eric Goldstein, *Middle East & North Africa (Acting)*

Muamir Segan, *Africa*

José Miguel Vivanco, *Americas*

Hugh Williamson, *Europe and Central Asia*

Heather Barr, *Women's Rights (Acting)*

Shantha Rau Barriga, *Disability Rights*

Richard Dicker, *International Justice*

Lama Fakih, *Crisis and Conflict*

Bill Frelick, *Refugees' Rights*

Arvind Ganesan, *Business and Human Rights*

Steve Goose, *Arms*

Amanda Klasing, *Women's Rights (Acting)*

Zama Nefi, *Children's Rights*

Greene Reid, *London Gay, Bisexual, and Transgender Rights*

Daniel Wilkinson, *Environment and Human Rights (Acting)*

**ADVOCACY DIRECTORS**

Yasmine Ahmed, *United Kingdom*

María Laura Casinheira, *Brazil*

Louis Charbonneau, *United Nations, New York*

Faïda Delf, *Canada*

Kanako Doi, *Japan*

John Fisher, *United Nations, Geneva*

Meenakshi Ganguly, *South Asia*

Bénédicte Jeannerod, *France*

Sarah Holwinski, *Washington DC*

Luise Leitzel, *European Union*

Wenzel Michalski, *Germany*

Måns Molander, *Nordic*

Elaine Pearson, *Australia*

**BOARD OF DIRECTORS**

Amy Rao, *Co-Chair*

Neil Rimer, *Co-Chair*

Betsy Karim, *Vice Chair*

Chi Matsumoto, *Vice Chair*

Amy Towers, *Vice Chair/Treasurer*

Catherine Zemanström, *Vice Chair*

Bruce Rabb, *Secretary*

Ahwan Adjei

Lishan Askog

George Coelho

Roberto Dallino

Kimberly Marteau Emerson

Loubna Freih

Leslie Gilbert-Lurie

Paul Gray

Caitlin Heising

Karen Herskowitz

Judith Heumann

David Lakhdir

Louisa Lee-Reizes

Alicia Milana

Ambassador Robin Sanders

Bruce Simpson

Joseph Skrzyński AO

Doreen Staigle, C.M.

Siri Stolt-Nielsen

Marie Warburg

Isabelle de Wissem

Musa Yezengizawa

Andrew Zoll

October 30, 2021

Minister Samson Gwede Mantashe  
Department of Mineral Resources and Energy  
70 Mentjies Street  
Sunnyside  
0001

Copied: Mr. Reuben Masenya  
Director of Mine Closure Rehabilitation

Sent via email: [Yuyelwa.Siveka@dmre.gov.za](mailto:Yuyelwa.Siveka@dmre.gov.za),  
[Buang.Mokate@dmre.gov.za](mailto:Buang.Mokate@dmre.gov.za), [Buang.Mokate@dmre.gov.za](mailto:Buang.Mokate@dmre.gov.za)

Dear Honourable Minister Mantashe,

I am writing to share with you a summary of the findings of our research into the human rights risks of abandoned and unrehabilitated coal mines in South Africa.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights abuses in over 90 countries worldwide. Human Rights Watch has an office in Johannesburg, from where we cover our work for South Africa and the Southern Africa Development Community (SADC). Human Rights Watch is committed to producing material that is accurate, well-informed, and objective. We want to ensure that our report properly reflects the views, policies, and practices of relevant authorities and actors. With this in mind, we hope you or your staff will respond to the questions below so that your views are accurately reflected in our reporting.

### SUMMARY OF FINDINGS

As of 2017, nearly R60 billion (\$3.9 billion) was held for mining rehabilitation by the Department of Mineral Resources and Energy (DMRE).<sup>1</sup> The failure to rehabilitate current and new mines, in addition to the legacy of 6000 abandoned mines across South Africa, poses

<sup>1</sup> Mark Olalde, Oxpeckers "R60-billion held for mines that are never closed." (17 May 2017) available via: <https://oxpeckers.org/2017/05/r60-billion-held-mines-never-closed/>



HRW.org

significant risks to human health and life, including from drownings in abandoned shafts and from polluted water. The many artisanal miners who work in and around abandoned mines face particularly pronounced risks. The government has failed to live up to its responsibility to ensure that companies operating mines properly rehabilitate them after the mine's life ends, leaving communities with a toxic mess. The financial provision that government requires mining companies to submit to cover clean-up costs is grossly inadequate and government does little to otherwise ensure mining companies clean up the toxic legacy they are leaving behind, despite the legal requirement to do so.

For example, in Ermelo we interviewed residents who lived near Imbabala Coal (Pty) Ltd, an unrehabilitated coal mine, whose children had died from either drowning in the unrehabilitated mine or working as artisanal miners in the mine and dying from a collapsed shaft. Other interviewees indicated there were many more deaths amongst artisanal miners in that location since 2012. The company formerly operating the mine has done little to rehabilitate the site. The company initially submitted R600 000 to cover clean-up costs in 2005, but in 2019 the DMRE determined the actual cost of clean-up would be R450million.

In Carolina, residents interviewed by Human Rights Watch complained of stomach aches after drinking the tap water. As a result, they rely on tap water to do washing and cleaning but had to walk daily to collect borehole water for cooking and drinking. High sulphate levels in the Komati Catchment have been attributed to the extensive coal mining in the area and the decanting of defunct mines. This comes nine years after a landmark court decision *The Federation for Sustainable Environment and Others v Minister of Water Affairs and Others*<sup>2</sup> that required the municipality to provide potable water in line with national standards and “engage actively and meaningfully with the [the Silobela Concerned Community and Federation for Sustainable Environment] regarding the steps being taken to ensure potable water can be supplied through the water supply services.”<sup>3</sup> Nearly a decade on, there is little evidence any action has been taken, and Carolina residents continue to experience the negative consequences of the government and mining industry's inadequate management of water resources.

#### QUESTIONS RELATING TO HUMAN RIGHTS CONCERNS

In the interest of obtaining a thorough, balanced, and objective understanding of the issue we are examining, we are writing to get your department's perspective on the matters highlighted above so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

---

<sup>2</sup> 35672/12 [2012] ZAGPPHC 128 (10 July 2012), para 4.

<sup>3</sup> *Ibid*, para 26, point 3.

1. Despite the legal requirement that mining companies properly rehabilitate the environmental degradation caused by their operations, what are the DMRE's views about industry's passive approach to the rehabilitation, decommissioning, and closure process?
2. How much does the DMRE currently hold in financial provision for mine rehabilitation? Is the amount sufficient to cover environmental liabilities including the cost of treating water resources impacted by mining?
  - a. What is the approximate value of the financial provision held for each province?
  - b. What is the approximate value of the financial provision held for each commodity?
3. From the period January 2011 to September 2021, how much has been spent by the DMRE for mine rehabilitation?
  - a. What percentage of the above amount was provided by mining companies for rehabilitation?
  - b. What is the approximate amount that has been spent on rehabilitating mines and the related environmental degradation and water pollution in each province (from January 2011 to September 2021)?
4. As part of the strategy for addressing environmental degradation caused by the legacy of ownerless and derelict mines and mines that began operating post-2002 that have been abandoned without rehabilitation:
  - a. What is the breakdown of where these mines are located?
  - b. What criteria is used to classify these mines as "high", "moderate" and "low" priority?
  - c. Has the DMRE assessed the likelihood of the deaths of community members and artisanal miners as a result of leaving these mines unrehabilitated? If so, what was the outcome of this assessment?
  - d. What is the anticipated environmental impact, impact to surface and groundwater for not rehabilitating these mines?
  - e. What is the DMRE's anticipated timeline for rehabilitating mines classified as "high", "moderate" and "low" priority?
  - f. What steps have been taken to ensure the treatment of acid mine drainage.
5. The following documents were requested from the DMRE on 2 July 2021 using PAIA but the request has been ignored and access has not been granted or denied. We would thus like to give your department another opportunity to provide the following documents:
  - a. Reports from the Council of Geosciences' field investigations on ownerless and derelict mines in Mpumalanga and across the country from 1 April 2015 to date;

- b. Reports from the Council of Geosciences' post-closure rehabilitation monitoring and maintenance including the number of deaths or injuries from the derelict and ownerless mines from 1 April 2015 to date that have been recorded; and
  - c. Information regarding the criteria used to rank the risks posed by the ownerless and derelict mines.
6. Has Imbabala Coal (Pty) Ltd complied with the directive issued on 26 September 2019 by your department in terms of section 28 of the National Environmental Management Act (NEMA)? If so, when and how. If not, what steps had been taken to ensure they comply?
7. When was your department planning to finalise the Mine Closure Strategy and would there be a public participation process that solicited the views of mining-affected communities and artisanal miners?
8. What are the DMRE's short, medium, and long-term objectives on transitioning South Africa's energy-mix and energy-intensive sectors away from fossil fuels to a low-carbon path?

Your written response to the questions above, if sent to Cara Schulte [REDACTED] by 5 November 2021, will be reflected in our forthcoming report. Any other comments or information that you can provide we would appreciate.

We would also welcome the opportunity to speak with you or your representative about abandoned and unrehabilitated mines. Please let us know if you have any questions or would like to arrange a meeting or video conference in early November.

Sincerely,



Daniel Wilkinson  
Acting Environment Director  
Human Rights Watch



Dewa Mavhinga  
Southern Africa Director  
Africa Division  
Human Rights Watch



# Letter from Human Rights Watch to Imbabala Coal (Pty) Ltd, October 31, 2021

350 Fifth Avenue, 34<sup>th</sup> Floor  
New York, NY 10118-3299  
Tel: +1-212-290-4700  
Fax: +1-212-736-1300; 917-591-3452

Kenneth Roth, Executive Director

Deputy Executive Directors  
Tirana Hassan, DED/Chief Programs Officer  
Wisia Heneghan, DED/Chief Operating Officer

Michele Alexander, Chief Development Officer  
Alan Feldstein, General Counsel (Acting)  
Mel Yong, Chief Communications Officer  
Colin Mincy, Chief People Officer  
James Powell, Chief Technology Officer  
James Ross, Legal and Policy Director  
Bruno Stagno Ugarte, Chief Advocacy Officer

Division and Program Directors  
Brad Adams, Asia  
Nicole Austin-Hillery, United States  
Eric Goldstein, Middle East & North Africa (Acting)  
Maui Segun, Africa  
José Miguel Vivanco, Americas  
Hugh Williamson, Europe and Central Asia

Heather Barr, Women's Rights (Acting)  
Shantha Rau Barriga, Disability Rights  
Richard Dicker, International Justice  
Lama Fakh, Crisis and Conflict  
Bill Frelick, Refugees' Rights  
Avinod Ganesan, Business and Human Rights  
Steve Goose, Arms  
Amanda Klasing, Women's Rights (Acting)  
Zama Nefi, Children's Rights  
Gyopene Reid, Lesbian, Gay, Bisexual, and Transgender Rights  
Daniel Wilkinson, Environment and Human Rights (Acting)

Advocacy Directors  
Yasmine Ahmed, United Kingdom  
Maria Laura Canineu, Brazil  
Louis Charbonneau, United Nations, New York  
Farida Delf, Canada  
Kanako Del, Japan  
John Fisher, United Nations, Geneva  
Meenakshi Ganguly, South Asia  
Benedicte Jeannenot, France  
Sarah Holwerdt, Washington DC  
Lotte Leicht, European Union  
Wenzel Michalski, Germany  
Máire Molloy, Nordic  
Elaine Pearson, Australia

Board of Directors  
Amy Rau, Co-Chair  
Neil Rimer, Co-Chair  
Betsy Karel, Vice Chair  
Oki Matsumoto, Vice Chair  
Amy Towers, Vice Chair/Treasurer  
Catherine Zenzendorf, Vice Chair  
Bruce Rabb, Secretary  
Akwas Aidoo  
Lishan Aking  
George Coelho  
Roberto Dallino  
Kimberly Marteau Emerson  
Ludina Frith  
Leslie Gilbert-Lurie  
Paul Gray  
Caitlin Heising  
Karen Herskowitz  
Judith Heumann  
David Lakhdir  
Louisa Lee-Reszes  
Alicia Millana  
Ambassador Robin Sanders  
Bruce Simpson  
Joseph Skrzynecki AO  
Donna Staighl, C.M.  
Siri Stolt-Nielsen  
Marie Warburg  
Isabelle de Wames  
Masa Yanagisawa  
Andrew Zoll

October 31, 2021

Mr. Robert Needham  
Imbabala Coal (Pty) Ltd  
286 Zambezi Drive  
Sinoville  
Pretoria  
0182

Sent via email: [needham@vodamail.co.za](mailto:needham@vodamail.co.za); [economics@vodamail.co.za](mailto:economics@vodamail.co.za)

Dear Mr Robert Needham,

We are writing to share with you a summary of the preliminary findings of our research into the human rights risks associated with abandoned and unrehabilitated coal mines in South Africa, and to request you provide answers to questions related to this research.

Human Rights Watch is an international human rights organization that conducts research and advocacy on human rights issues in more than 90 countries worldwide. We have an office in Johannesburg that is responsible for our coverage of South Africa and the Southern Africa Development Community (SADC).

Human Rights Watch is committed to producing analyses that are accurate, well-informed, and objective, and to ensuring that in our reporting we properly reflect the views, policies, and practices of relevant authorities and actors. With this in mind, we would very much appreciate it if you or your staff could respond to the questions below.

## SUMMARY OF FINDINGS

Based on available information, we have found that the failure to rehabilitate current and new mines in South Africa, in addition to address the legacy of 6000 abandoned mines across the country, poses potentially significant risks to human health and life, including due to polluted water and accidents in inadequately secured mines that have ceased operation. The many artisanal miners who work in and around abandoned mines face particularly pronounced risks. The financial



HRW.org

AMMAN · AMSTERDAM · BEIRUT · BERLIN · BRUSSELS · CHICAGO · COPENHAGEN · GENEVA · JOHANNESBURG · KINSHASA · LONDON · LOS ANGELES · MIAMI

provision that government requires mining companies to submit to cover clean-up costs is grossly inadequate and government does little to otherwise ensure mining companies clean up the toxic legacy they are leaving behind despite the legal requirement to do so. Despite the Department of Mineral Resources and Energy (DMRE) requiring companies to set aside funds for mine rehabilitation, the government has failed to take adequate steps to ensure that companies operating mines properly rehabilitate them after the mine's life ends.

In Ermelo, we visited your mine site on Farm Nooitgedacht 268 IT on May 5 and September 3, 2021. Imbabala Coal (Pty) Ltd has [not mined](#) at this location since 2011. During both our visits, we found your company has not taken steps to restrict access to the site by local residents, including children. We interviewed residents who lived near your mine who described what they believed were the risks from the unrehabilitated mine and described the deaths of several children from 2014 to 2021 from drowning in the open pit on the mine site and 21 deaths of artisanal miners from collapsed shafts from 2012 to 2014.

According to information provided by the DMRE to a reporter through a PAIA request,<sup>1</sup> Imbabala Coal (Pty) Ltd provided to the DMRE a bank guarantee of R600 000 on September 12, 2005, when the mine was first opened, for future rehabilitation costs in compliance with the National Environmental Management Act.

Our research suggests, however, both that this guarantee was far too little for the coal's rehabilitation cost and that Imbabala Coal (Pty) Ltd. has not taken adequate steps to rehabilitate and secure the mine site. According to a directive issued on September 26, 2019 by the Department of Mineral Resources and Energy (DMRE), a DMRE inspection on August 23, 2019 found that Imbabala Coal (Pty) Ltd "failed and or neglected to provide controlled access to the mining operation and [that] has rendered the area unsafe to [the] lives of the neighbouring communities and animal life since the mine was abandoned." Following the inspection, the DMRE's directive of September 26, 2019 mandated Imbabala Coal (Pty) Ltd to "provide [a] rehabilitation guarantee by a registered Bank or Financial Institution to an approximate amount of R450 million for the environmental liability." The DMRE also required that Imbabala Coal take steps to secure the mine site, such as requirements to:

---

<sup>1</sup> The DMRE's PAIA response is available here:

<https://www.dropbox.com/sh/ijumwznhocspilhi/AAA0ua8rqpVkc7rID8hUjpsxKa?dl=0&preview=1320AR+grant+gd.pdf> and Financial provision data is available here:  
<https://www.dropbox.com/sh/ijumwznhocspilhi/AAA0ua8rqpVkc7rID8hUjpsxKa?dl=0&preview=Mpumalanga+FP.xlsx>

- Erect a fence and provide security to prevent unauthorized access to the mining area;
- Pump out and treat all water found in the mine void and pits and dispose such water in terms of the National Water Act 36 of 1998;
- Rehabilitate and close-off the open, mined out pits in terms of the provisions of the environmental management program;
- Seal-off all adits and voids to prevent access to the underground mined out areas;
- Remove all general waste, garden refuse, building rubble found in the mining area and dispose such waste in a registered landfill site; and,
- Provide a consultation plan with the local municipality, communities and Department of Water and Sanitation and other organs of State for the implementation of the above instructions.

#### QUESTIONS RELATING TO HUMAN RIGHTS CONCERNS

In the interest of obtaining as thorough understanding of the issues we are examining, we are writing to get your company's perspective on the matters highlighted above so we can incorporate your views into our forthcoming report. In particular, we are interested in the following information:

1. Is the bank guarantee provided to the DMRE by Imbabala Coal (Pty) Ltd of R600 000 as financial provision still valid?
2. What steps has Imbabala Coal (Pty) Ltd taken to comply with the directive issued on September 26, 2019 by the Department of Mineral Resources and Energy? What further action is planned? Has Imbabala Coal (Pty) Ltd provided a rehabilitation guarantee for approximately R450 million?
3. What mitigation measures have been implemented to ensure the mine site is inaccessible to community members or artisanal miners in order to reduce the risk of deaths and injury?
4. What is the total amount of financial provision that is currently held by the DMRE for the rehabilitation of Imbabala Coal (Pty) Ltd's former mine site in Ermelo? Is the amount sufficient to cover the environmental liability and the cost of rehabilitating the mine, including treating water? If so, please elaborate on how this determination was made. What steps do you plan to take to rehabilitate, decommission and close the mine?
5. Since operations stopped in 2011, what subsequent consultations has Imbabala Coal (Pty) Ltd had with interested and affected parties, including neighbouring

communities, to discuss the rehabilitation, decommissioning and closure of its mine site?

Your written response to the questions above, if sent to Cara Schulte [REDACTED] by 5 November 2021, will be reflected in our forthcoming report, as appropriate. Please note that we may also at our discretion publish your response, either in full or in part. We'd also welcome any other observations or information that you believe would be relevant to our reporting.

We would also welcome the opportunity to speak with you or your representative about the matters discussed in this letter through a meeting or video conference in early November.

Thank you for your time.

Sincerely,

[REDACTED]

Daniel Wilkinson  
Environment Director  
Human Rights Watch

[REDACTED]

Dewa Mavhinga  
Southern Africa Director  
Africa Division  
Human Rights Watch

# The Forever Mines

## Perpetual Rights Risks from Unrehabilitated Coal Mines in Mpumalanga, South Africa

Across South Africa, hundreds of unrehabilitated coal mines dot the landscape posing risks to the water of South Africans and a serious risk of accidents for both residents and artisanal miners. Despite government requirements to rehabilitate these mines once mining is complete, a lack of government enforcement and inadequate assessment of the cleanup costs means the vast majority of mines are left abandoned. According to a 2021 government report, only 27 mines, all asbestos, of the 2,322 “high risk” abandoned mines identified by government regulators had been cleaned up since 2009.

Based on 34 interviews with community members, artisanal miners, health workers, civil society, and local government officials and other research, *The Forever Mines: Perpetual Rights Risks from Unrehabilitated Coal Mines in Mpumalanga, South Africa* describes the government’s failure to mitigate the risks that abandoned coal mines pose to residents of communities and artisanal miners. The findings underscore the need for government to ensure that costs of coal extraction, including the cleanup of mines, are borne by the mining industry and not the people who live nearby.

Coal is one of the highest emitting and most widely-used fossil fuels in the world today; it is also the most polluting. Coal emissions can lead to significant health consequences for communities near mines or power plants as a result of polluted air, water, and soil. South Africa needs to take immediate steps to transition away from fossil fuels to clean energy to limit the impacts of the climate crisis and to ensure that fossil fuel infrastructure, including coal mines, is properly cleaned up as part of that transition to minimize adverse impacts on neighboring communities.



*A child collects coal in front of a coal-fired power plant in Emalahleni in the coal-rich province of Mpumalanga, South Africa, June 2, 2021.*

© 2021 REUTERS/Siphiwe Sibeko