



HARMONY'S APPROACH TO WATER



INTRODUCTION

Access to water, sanitation and hygiene is a human right.

Water is essential not only to health, but also to poverty reduction, food security, peace and human rights, ecosystems and education. Many countries face growing challenges linked to water scarcity, water pollution and degraded water related ecosystems and it is estimated that 2.6bn people will lack safely managed sanitation by 2030.

At Harmony, we aim to prevent contamination of land, water and air by using resources responsibly. Where we do not succeed in achieving these goals we are committed to remedy any breaches as quickly and rapidly as possible.

MUNICIPAL WASTE WATER CHALLENGES

Our work in the water sphere is complicated by the fact that, in many of our mining jurisdictions in South Africa, municipalities are struggling to maintain and operate municipal wastewater treatment plants (WWTPs) resulting in raw sewage being discharged into local streams, rivers, dams and pans. In some cases untreated wastewater bypasses dysfunctional municipal treatment plants and is one of the most significant polluters of our natural water resources:

1. In Matjhabeng untreated wastewater was discharged into Witpan. This is one of Harmony's primary sources of natural water used for mining and metallurgical operations, as well as surrounding communities and agricultural downstream water users along the Sand River.
2. In Matlosana and Merafong untreated wastewater found its way down the Koekemoer Spruit and Wonderfontein Spruit respectively. Both ultimately discharge into the Vaal River. The Vaal River Catchment is one of South Africa's major natural sources of water.
3. And more recently there has been public controversy about discharges of wastewater and sewage into the Voëlpan Dam in the Free State, with Harmony's Target mine being held responsible to some degree. We deal with this matter in more detail on page 4.



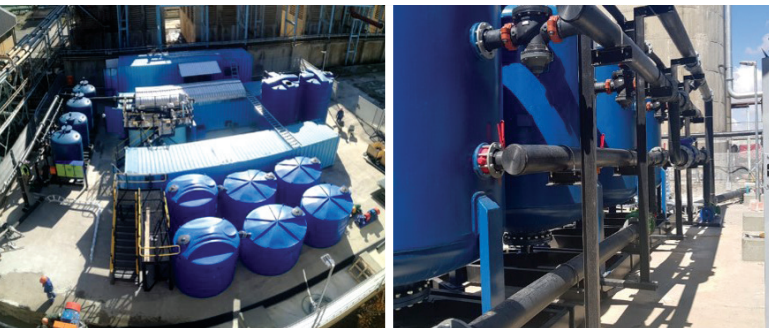
PARTNERING WITH MUNICIPALITIES

Harmony regards municipalities as our key partners in ensuring improved sanitation to our host communities. We have identified opportunities to assist our local municipalities through our Social and Labour Plans (SLPs) in refurbishing, operating and maintaining key waste water treatment plants in the respective regions. Harmony has employed the services of Agreenco, specialists in water treatment, not only to refurbish and operate the treatment facilities, but also to rebuild skills and capacity of municipalities to ensure the future sustainability of the facilities.

Harmony started this initiative in Matjhabeng where the Witpan WWTP was refurbished in January 2023 and has since been operational (**refurbishment cost R10.7m**).

We also undertook the refurbishment of the Stilfontein WWTP in Matlosana and Oberholzer WWTP in Merafong. These became fully operational in August 2023. (**refurbishment cost R9.2m and R15.6m respectively**).

Water quality in the rivers and streams is expected to improve, with consequential downstream improvements to end users both for direct use and food production. The three projects will collectively increase the sewage treatment capacity of the refurbished plants by 30 million litres per day and ultimately make a significant contribution to Harmony's own commitments towards the UN Sustainable Development Goals.



INTERNAL WATER MANAGEMENT

Harmony's internal Water Management Strategy recognises that water is critical to mining and processing activities and development can only be assured with a secure water supply. Potable water is a crucial resource for our employees and our operations, especially in our water-scarce jurisdictions.

We have committed significant capital to increasing our water recycling ratio and reducing potable water intake – a crucial aspect of maintaining our social licence to operate. Our main objective is to conserve this natural resource by improving our water efficiencies through reuse and recycling.



Since 2010 we have been reducing potable consumption and improving efficiencies throughout our mines and metallurgical plants.

We continue to invest in water treatment plants that not only ensures security of supply of potable water, but also reduces our dependency and impact on natural resources shared by our host communities.

In 2017 we completed the construction and commissioning of a 5MI/day Reverse Osmosis Treatment Plant at Doornkop, another 0.9MI/day plant at Kusasaletu and in 2019 a 5MI/day plant at Nyala Shaft. In 2023 we further expanded treatment capacity in the Free State with another 2.1MI/day Reverse Osmosis Treatment Plant at Target 1 Shaft.

Reverse osmosis is a membrane treatment process primarily used to separate dissolved solutes from water. Reverse osmosis is most commonly known for its use in drinking water purification, particularly with regard to removing salt and other effluent materials from water molecules.

WATER PUMPING

In order to ensure continuation of mining and the safety of our employees Harmony is pumping extraneous mine water under directive from the Department of Water and Sanitation from both the Margaret Shaft near Stilfontein and Covalent Shafts near Carletonville. With the Harmony mines in the two regions being the deepest and with the longest life mines, our operations are prone to a significant risk of flooding and financial liability should extraneous mine water pumping cease. The water being pumped originates from neighbouring defunct mining operations outside and up gradient of the Harmony mining operations.

At the end of 2022 Harmony completed two feasibility studies for the potential treatment of excess water at Covalent and Margaret to offset current potable water consumption at Mponeng and Moab Khotsong Operations. Both projects have been included in Harmony capital expenditure going forward and planned construction of an 8MI/day plant to treat excess Covalent water and offset potable water use at Mponeng Operations should be completed towards the end of 2024, with a treatment plant for excess Margaret Shaft water likely to be completed in 2025, offsetting potable water use at Mine Waste Solutions Plant and/or Moab Operations. Harmony is also exploring potential for agriculture use.

In the Free State Harmony is looking at the feasibility of expanding its treatment capacity by constructing an additional facility to supply Tshepong Shaft with potable water by 2025.





COLLABORATING WITH OTHER COMPANIES

Harmony is also collaborating and working with peers in the mining industry to address some of the regional challenges associated with water management.

Harmony, as many other mining companies that have to pump large volumes of water from underground to ensure sustainable and safe mining, believes that the excess fissure water poses a major opportunity to local water supply companies to curb the projected shortfalls in potable water supply to water-stressed areas such as Gauteng and surrounds.

Harmony has for many years supported regulatory structures such as the Government Task Team on Mine Closure, led by the Departments of Water and Sanitation, and Mineral Resources and Energy. These structures are also supported by the Minerals Council's Environmental Policy Committee. Their intent is to foster collaboration between mines and regional stakeholders to ensure that potential risks and liabilities associated with mine flooding and decant are adequately addressed.

Harmony and neighbouring mines such as Sibanye and DRDGold have also been exploring partnerships with local water supply companies to expedite the development of regional water treatment and supply schemes. Through these

engagements, Rand Water launched a feasibility study in 2022 in the Far West Rand to evaluate the viability of incorporating excess mine water into their local water supply systems. Their predictions are that they will experience a major shortfall of potable water required to supply the ever growing need for potable water around our major cities and towns. The excess mine water provides an potential opportunity to treat and incorporate mine water into potable water supply schemes.

Harmony and other mines have shared regional water balances, water pumping volumes and qualities, as well as our own water demand going forward to assist Rand Water in building a sustainable business case for potential regional water treatment schemes. Early indications are positive and Harmony will continue to strategically support these initiatives, not only to offset the significant cost of water pumping from underground but critically addressing the need for water in our host communities.



MINTEK INITIATIVE

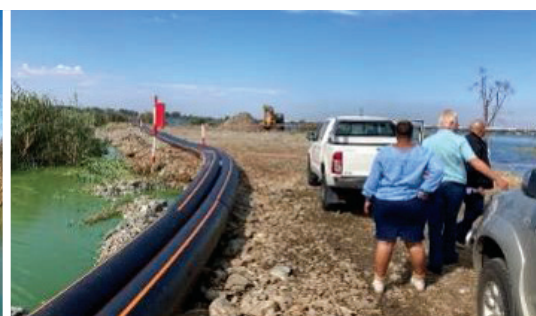
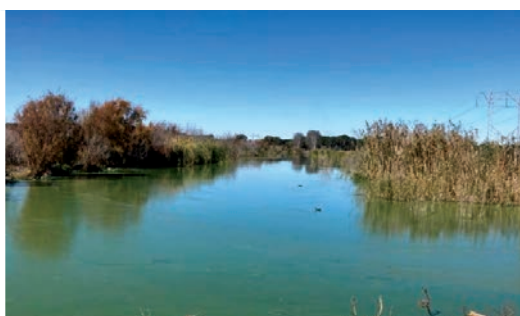
The Council for Mineral Technology, known as Mintek, our national mineral research organisation is recognised as one of the world's leading technology organisations specialising in mineral processing, extractive metallurgy, and related

fields. Harmony, in principle, has committed its support to an initiative from Mintek to secure funding from the German Federal Ministry of Education and Research for their proposed project to develop a strategy for implementation of post-mine closure management measures in the Far West Rand to mitigate ongoing environmental and socio-economic impacts related to critical water resources.

MIDVAAL AND FREE STATE

In addition to the work in the Far West Rand, Harmony has forged strong relationships with water supply companies in our other jurisdictions, i.e. Midvaal Water Company in Stilfontein and Bloem Water in the Free State.

Considering Harmony's intent to be long term water users in areas in which we operate, it is crucial that we secure access to good quality water from our local supply companies and continue to exploit synergies in incorporating excess mine water into regional supply schemes. To that affect we continue to provide strategic guidance, and where relevant technical support from our operational engineering teams to ensure that supply schemes remain operational and sustainable in years to come.





THE VOËLPAN CHALLENGE

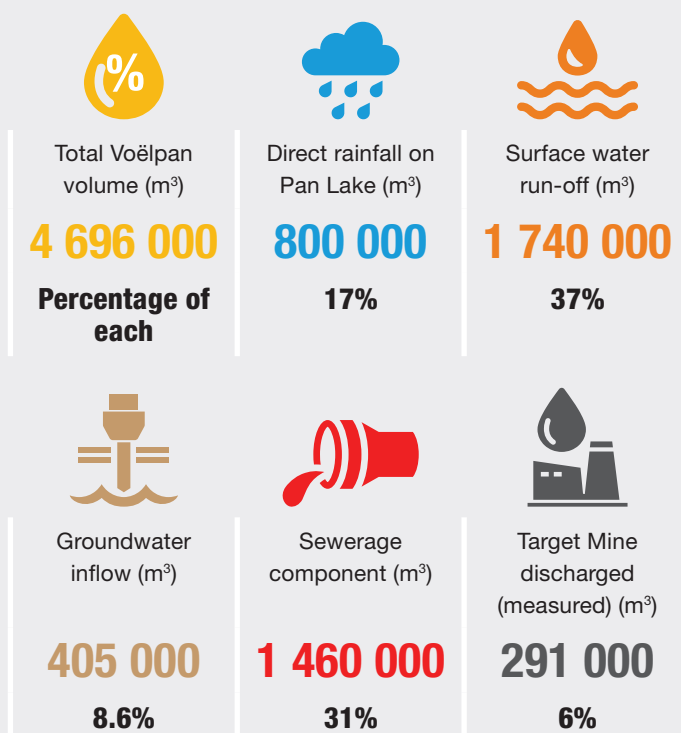
The flooding of Voëlpán has caused damage to about 40 homes located adjacent to the dam in the Nyakallong community since 2019.

The flooding is a consequence of a number of factors. One of the main factors was the extent of rainfall over three years. Against the long-term average rainfall in the area of 587mm, the 2019-20 rainfall season experienced 807mm falling in the year, followed by 654mm in the 2020-21 year, and 988mm in the 2021-22 year.

The area experienced unusually high rainfall, causing excess water from nearby stormwater systems to collect in the dam. Voëlpán, acting as a low-lying catchment pan, gathered and stored the runoff.

This also strained Target's ability to accommodate the extra rainfall without discharges into the dam. However, it should be noted that the mine's contribution to the flooding of the dam was only 6% of the total volume that ended up in the pan.

The far greater factors were the direct rainfall on the dam, surface water runoff, groundwater inflow and, regrettably, uncontrolled sewage flows that occurred due to defunct municipal infrastructure discharging raw sewage through the streets of the village, which finds its way into the pan. It is this latter factor that is largely responsible for the pollution that has been reported on. The table below illustrates the contributions of each of these factors.



Notwithstanding Target's limited responsibility for the flooding, Harmony has taken a number of steps to ameliorate the impact on affected residents.

In addition to the work we have done to reduce impacts on Voëlpán, we are assisting the Municipality with providing temporary accommodation for impacted households; R2 million was budgeted for this.

In response to a pre-directive and then a directive from the Department of Water and Sanitation, we agreed to:

1. Install two water treatment plants. The first came online on 30 May. The second was also commissioned successfully and has been operational since July 2023.
2. Reinstate the onsite evaporation pond
3. Install sprays at the Million Gallon Dam to increase evaporation rates

With the two water treatment plants becoming operational at Target, Harmony has successfully stopped discharging into Voëlpán.

In addition, we have appointed an independent environmental consulting firm (WSP Group Africa) to compile a rehabilitation plan for the Voëlpán. The rehabilitation plan was to:

1. Determine the nature and extent of the impact that the mine discharged water caused on the local water resources
2. To recommend measures that can be implemented to remediate or mitigate the impacts, with clear time frames and descriptions of how and when each remedial/mitigation plan action will be implemented

The report was finalised in October 2023. It makes seven specific recommendations. These make it clear that the situation cannot be resolved by the Target mine alone, and that a collaborative effort is needed where the municipality also needs to address its stormwater reticulation systems that drain into the pan, as well as its defunct wastewater treatment works.

Our intention is for the report to serve as a constructive contribution to collaborative initiatives with the municipality in addressing the matter at hand.

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