

# WATER

**Kumba is heavily reliant on water as an input to mining and processing activities. Our mines are in the water-stressed Northern Cape, where arid conditions and municipal potable water supply constraints underscore the need for responsible water management. To maintain our licence to operate, we take all reasonable steps to ensure that we do not degrade water quality or compromise the access rights of other users.**

## OUR STRATEGIC APPROACH


In supporting the ICMM's water position statement, we uphold commitments to apply strong and transparent corporate water governance, manage water at operations effectively and efficiently, and collaborate with our partners and our communities to achieve responsible and sustainable water use.

Progress in implementing our water strategy is driven through our water management programme, which is supported by a mandatory group water standard and delivered via operational water action plans. Key objectives include: minimising our use of higher grade water and finding lower grade sources; maximising water reuse; ensuring no spillage of contaminated storm and process water; ensuring no spillage of groundwater and promoting its beneficial use.

Each operation has a dedicated water manager. During 2017 we have been implementing and embedding Anglo American plc's new water management standard and associated reporting requirements. The standard guides a risk-based, regional approach to water management, in line with global best practice and the ICMM water reporting guidelines.

In 2017, we started reporting against a more comprehensive and rigorous set of performance indicators. We implement detailed, dynamic operational water balances that are linked to regional climatic data. Modelling water balance scenarios significantly improves our ability to predict and quantify risks and identify infrastructure requirements to enable timely management responses to climatic variability.

We participate annually in the CDP's water disclosure project and for the third consecutive year we achieved band 'A' performance for leadership in respect of the CDP water programme. Our CDP submission is available at [www.cdproject.net](http://www.cdproject.net) and on our

 [www.angloamericankumba.com/sustainability/performance.aspx](http://www.angloamericankumba.com/sustainability/performance.aspx)

## COMPLIANCE AND INCIDENT MANAGEMENT

The evolving regulatory environment can result in delays in obtaining water licences. We continue to engage with the Department of Water and Sanitation (DWS) to mitigate licensing delays and ensure that all water use licences (WULs) are in place. There are currently no outstanding authorisations for existing activities at our operations.

The principal water-related risks we focus on managing are: the risk of a spillage of dust suppression water, which contains chemicals, with likely contamination of underground water; the risk of spillage of potable water into stormwater channels at Sishen; and Kolomela mine's increase in dewatering resulting in more water being spilled into the environment due to the local water service provider – Sedibeng Water – being unable to accommodate the current excess volumes.

## WATER CONSUMPTION, DISCHARGE AND QUALITY

We have continued to make good progress in reducing our water demands. Our water-saving projects have continued in 2017. Water intensity has, however, increased from 139 l/t to 147 l/t due to increased production.

Groundwater is our primary water source, accessed through dewatering boreholes. The deeper we mine, the more groundwater has to be pumped through the ingress from the mine pit to ensure safe working conditions. Kumba also makes use of municipal water for domestic purposes. In some instances, our dewatering activities have led to depletion of underground water on the neighbouring farms. We are currently compensating all affected farmers with water and grazing subsidies.

In addition to making sure that the groundwater in and around Sishen and Kolomela is properly managed and understood we have invested in a pipeline system that

pumps excess clean groundwater from dewatering into the Vaal Gamagara pipeline to support regional water supply. When there is too much water for this pipeline we divert it to a pump station which feeds water into boreholes outside the dewatering zone at a predetermined rate suitable to each specific borehole, thereby recharging the aquifer. A focus in 2017 has been to advance a Gamagara river flow restoration project, which aims to address the negative impacts of Sishen dewatering on the river. This is progressing well and involves ongoing stakeholder engagement, with the main roleplayers like DWS, DMR and farmers already engaged to get inputs and buy-in into our preferred solution.

Operations reduce their dependency on imported fresh water through the use of lower-quality treated sewage water. We minimise water losses by using a closed-loop water system and

capture rainwater for use in dust suppression. Clean and dirty water separation at our mines ensures that there is proper management of stormwater to avoid surface water pollution. The mines effectively recycle mine-affected water for use in the process plant.

The volume and quality of the water that is allowed to be discharged by our operations is predetermined through regulatory processes. Any unplanned discharges that breach legal agreements and/or licence conditions are reportable as environmental incidents and addressed. Kumba discharges most of its water for treatment at local water utilities; no water is discharged to fresh surface water sources. The quality of the water discharged at all of Kumba's operations is closely monitored. Changes in weather and climate extremes can impact on water quality. Our approach to managing climate-related risks is discussed on page 64.

#### GROUP WATER CONSUMPTION (Mℓ)

	2017	2016	2015	2014	2013
Water from water service providers or municipalities (1)	1.86	0.08	0.08	0.12	1.56
Waste water from other organisations (2)	1.83	1.01	1.32	1.56	1.47
Water from ground water (3)	31.40	24.07	24.87	13.48	9.50
<b>Water withdrawn (1 + 2 + 3)</b>	<b>35.09</b>	25.16	26.27	15.16	12.63
<b>Water internally recycled</b>	<b>3.12</b>	3.54	3.98	4.90	4.59
<b>Total water consumption</b>	<b>38.21</b>	28.70	30.70	20.06	17.22

#### SUPPORTING COMMUNITY WATER SECURITY

Our Kolomela and Sishen mines pump groundwater, in excess of operational needs, to Sedibeng Water. This water benefits the bigger Northern Cape region. We continue working with the DWS, Sedibeng and other stakeholders to explore maximising this social benefit to an even wider region. Sishen uses treated effluent (grey water) from the Kathu wastewater treatment works, to increase the export of groundwater to the Sedibeng reservoir. A sales agreement has been in place with the water authority since 2014 to supply bulk water to farmers, to compensate for their potential losses from private boreholes. The agreement between Kumba and Sedibeng does not guarantee fixed quantities. Quantities will fluctuate in line with dewatering requirements. The existing sales agreement has expired and we are negotiating revised water tariff rates for a new agreement.

Our Sishen and Kolomela mines continue to manage issues of concern among certain local farmers regarding mine dewatering that potentially affects the availability of groundwater. In 2017 we have been negotiating the purchase of three farms around Sishen in order to create a buffer zone.

Kolomela mine artificially recharges clean mine water to the underground aquifers that its operations traverse, thereby improving groundwater resources for neighbouring farmers and limiting quantities discharged into the environment. The initiative has been in operation for three years, recharging an average of 36,000 m<sup>3</sup> a month, approximately 10 to 15% of the excess water from the mine. Local farmers continue to respond positively. Studies are under way at Sishen to enable a similar project.