

# CSA GLOBAL PROTECTING AFRICA'S VITAL WATER RESOURCES



**W**ith an ever-growing focus on sustainability and ESG, there has been a clarion call for mines to help protect this scarce resource. With this in mind, leading consultancy, CSA Global, an ERM Group company, offers a range of water management services to the mining sector.

CSA Global's consultants have worked on a vast array of projects in most African countries, across all mineral commodities and covering all stages of the exploration and mining cycle. The company excels in providing technical advice on all aspects of mine water management – from collecting initial pre-mining baseline data, to supporting mines as they move into production and ultimately into mine closure.

Paul Heaney, principal hydrogeologist and a director of CSA Global Ireland, states that the company offers a whole suite of water related services. This includes mine water supply, dewatering and depressurization, surface water management, water discharge management and water balances.

Heaney states that, while the company offers water management services to clients at all stages of a mine's lifecycle, there has been a trend for companies to engage with CSA Global earlier in the planning stages of a mine. "Water is an integral part of the mine planning process. By considering water management early in the planning stage you can optimise mine design such that you minimise long term water management requirements and promote efficient water management throughout a mine's lifecycle, from start-up and all the way through operation and closure."

Heaney adds that mine closure is a key area that companies are now looking to address before they even start operations. The first reason for this is to facilitate permitting, but more importantly, it allows companies to plan for closure during the operational phase which helps to reduce potential legacy issues and provides environment benefits long after mining has ceased.

### Always thinking outside the box

While CSA Global draw on decades of mining, hydrogeology, hydrology, and geological expertise to develop efficient and practical solutions for a mine's water management, Heaney points out that there is no one-size-fits-all approach, especially in Africa. Heaney says that this is due in part to the different climate, geology, and regulatory environments which exist across the continent. "For example, we are working on projects in southern Africa, in the desert region where water supply is a major challenge. So, here it is all about finding a sustainable life of mine water supply. On the

other hand, some of the projects we are working on in West Africa, where there is high rainfall, effective surface water management and mine dewatering systems are critical to avoid pit flooding."

Heaney adds that technology is key to implementing an effective water management system. "CSA Global adopts technologies that are applicable for the level of data available, to assess interactions between surface and groundwater, to replicate complex hydrogeological environments and run multiple scenarios to assess uncertainties. For example, water balance models bring together all the various water components of a mine site, allows us to optimise mine water management with a view to minimising environmental impacts and costs, and provide sustainable water quantity and quality."

CSA Global's experts also assist with the planning and design of tailings storage facilities (TSF) and help protect the water environment. "Before a TSF is built, we are able to develop models to assess potential impacts, advise on water management elements of the TSF design, and through iteration guide the final TSF design," Heaney explains.

With an emphasis on advancing its technologies and maintaining close client relationships, CSA Global has earned a reputation in the water services area for helping mining companies advance and maintain their projects in Africa. A case in point is a mining company that CSA Global has been working with for over 10 years in various countries on the continent, assisting them with various water management requirements, including securing financial support, permitting, due diligence and managing ongoing water issues. "We have been an integral part in helping them grow because we understand their needs and they trust us," Heaney adds.

ESG principles and climate change have correctly put water management firmly in the spotlight and CSA Global is on a strong footing to help mining companies protect this valued resource on a continent where water security remains a key concern. ■

*Main image: CSA Global is playing a key role in ensuring effective water management at African mines*



**CSA Global**  
Mining Industry Consultants  
an ERM Group company



**Paul Heaney**