

# BLYDERIVIERSPOORT – dam of extraordinary beauty



Chris Snyman

**The Blyderivierspoort Dam in Mpumalanga is situated in one of the most spectacular surroundings in South Africa. Lani van Vuuren takes a peek into the history of this dam.**

A significant tributary of the Olifants River, the Blyde River rises on the western slopes of the Drakensberg, near Sabie in Mpumalanga. It flows northwards past the town of Pilgrim's Rest for more than 100 km through a region of extraordinary beauty along the eastern escarpment and through the Blyderivierspoort. Here the Blyde River cascades down a steep series of rapids to its lower reaches, where it again flows northwards to join the

Olifants River north of Hoedspruit.

Modern irrigation started in the Lower Blyde River Valley in the late 1800s following the settlement of Voortrekkers in the area. However, Tsetse fly and malaria as well as skirmishes with local populations kept irrigation development to a minimum. Only after the introduction of DDT in the 1930s and 1940s did permanent crop farming take off. The first investigations towards the establishment of a large irrigation scheme were undertaken prior to the Second World War. In the subsequent Irrigation Department report published in 1936, Circle Engineer MA Kean proposed the construction of a dam on the farm *Rietvley* 25 in the Lower Breede River Valley with a capacity of 333 million m<sup>3</sup>.

The outbreak of the Second World War stemmed any further development, and it was only in 1948 that the Irrigation Department again investigated the possibility of establishing a dam and bulk irrigation infrastructure here. The only irrigation of consequence could be found on the farm *Moriah*, where an irrigation furrow taking water directly from the

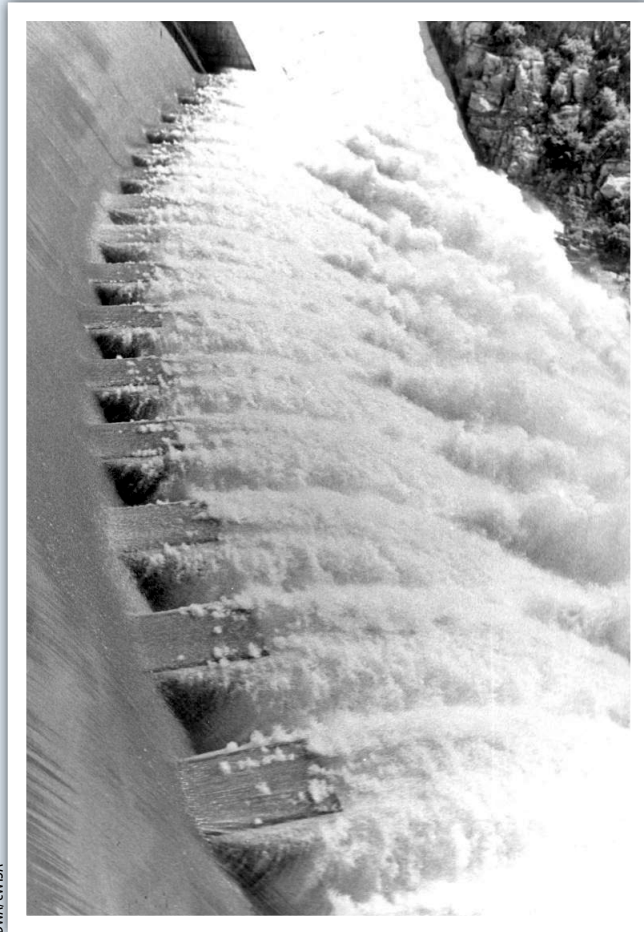
## HISTORY IN THE MAKING

In 1972, history was made when the Department of Water Affairs' first female engineer to work on a construction site, A Mouton, joined the team at Blyderivierspoort Dam.



**Left:** An artist's illustration of the Blyderivierpoort Dam made prior to its construction.

**Below:** A close-up of the energy dissipaters situated in the dam wall.



Blyde River had been established. At this stage there were still only around 200 whites living in the valley (the population of 5 000 black people were not considered), of whom only 31 were farm owners.

This proved not motivation enough to warrant such significant expenditure. The Irrigation Department was also demotivated by the results of soil studies, which indicated that soil conditions were mostly not conducive for irrigation. It was consequently decided that, until such time that the (white) farming community had increased considerably and had become experienced in local farming and irrigation methods, no large

irrigation scheme would be contemplated by the government.

The Phalaborwa mining complex was established in the 1950s, and subsequently the Phalaborwa Barrage was constructed in 1966 to supplement water to the complex. The supply from this 235 m-long concrete structure was controlled by the Phalaborwa Water Board, which had the right to abstract 28 127 290 m<sup>3</sup>/day from the Olifants River.

However, upstream developments, such as the raising of the Middelburg and Loskop dams later caused the water supply to the mines to fall short. This pushed the idea of a dam on the Blyde River back onto the table. The

## ORIGIN OF THE NAME 'BLYDE'

The naming of the Blyde River is of Dutch origin meaning 'happy river'. It was so called because in 1844 Voortrekker leader Hendrik Potgieter and others returned safely from Delagoa Bay where they had gone in search of a harbour for trading to the rest of their party of trekkers who had considered them dead. While still under this misapprehension they had named the river, where they had been encamped, Treurivier, or 'river of weeping'.

*Source: New Dictionary of South African Place Names by PE Raper.*





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Chris Kirchoff/Media Club South Africa

1969 White Paper suggested the construction of a dam on the farm *Blyde River Poort* in the district of Pilgrim's Rest with the purpose of stabilising the supply of water to irrigators in the Blyde River irrigation district while, at the same time, increasing the quantity of water available to the Phalaborwa Water Board.

The proposal was approved by Parliament and preliminary work on the dam site just below the confluence of the Blyde and Ohrigstad rivers started in April 1970 with the

establishment of roads and houses by the Department of Water Affairs. Excavation blasting started a year later in April 1971. By June, construction of the cofferdam started. This was completed in April 1972, despite setbacks caused by unprecedented floods (1 200 m<sup>3</sup>/s). In August 1972, the first concrete was placed via cableway, and two years later the river diversion gap through the wall was closed and the crusher removed out of the reservoir basin.

Originally it was thought that a

*Top: The Blyde River rises on the western slopes of the Drakensberg, near Sabie in Mpumalanga.*

*Above: A spilling Blyderiverspoort Dam. The dam is 71 m high, with a crest length of 240 m.*

## SOURCES

- Union of South Africa (1948) Irrigation Department. Regional report (preliminary) on Blyde River, Transvaal. Government Printer: Pretoria. Report No: 119A
- South African National Committee on Large Dams (1994) *Large Dams and Water Systems in South Africa*. JP van der Walt and Son: Pretoria
- Turton, AR, Meissner, R, Mampane, PM and Seremo, O (2004) *A Hydropolitical History of South Africa's International River Basins*. Water Research Commission Report No. 1220/1/04. Water Research Commission: Gezina.
- Republic of South Africa (1969) Secretary for Water Affairs report on the proposed Blyde River Government Water Works (Blyderivier Poort Dam). Government Printer: Pretoria. Report No: WP Q-'69

double curvature dam could be constructed, but later this was changed to a concrete gravity arch. This was decided as the most suitable type of structure because the massive but weathered and jointed condition of the foundation necessitated a good distribution of load over a wide area. The maximum height of the dam is 71 m, with a crest length of 240 m and a maximum wall thickness of 30 m. Blyderiverspoort Dam has a maximum capacity of 54 million m<sup>3</sup>.

The availability of alluvial deposits allowed the crusher to be located inside the dam basin, thus avoiding unnecessary scarring of the natural area. An aerial ropeway transported the aggregate from the crusher to the batching plant. Aggregate was stockpiled in the works area to facilitate early withdrawal of the crusher from the basin. The batching plant comprised aggregate bins into which the ropeway buckets discharged their loads, recovery tunnel and conveyor belts leading up to the top of the 30 m-high batching and mixing tower. The dam was completed in 1975, and spilled for the first time a year later. □