

M&D Construction Group in the fast lane at large mining project

FAST-DELIVERY OF A CONCENTRATOR

Work is progressing as planned on Vedanta Zinc International's (VZI) ambitious Gamsberg project, part of the South African zinc grouping's Black Mountain Mining (BMM) operations in the Northern Cape.

This will be one of the most digitally advanced new mines in Africa and will exploit one of the largest known, undeveloped zinc ore bodies in the world.

Gamsberg has a reserve and resource of 214 million tons, with a grade of between 6% and 6.5%, in addition to a life of mine (LOM) of about 30 years. During the first phase of operations, 4 million tons (t) of ore will be mined annually from an open pit, and 250 000 t of zinc-in-concentrate produced per year at the new concentrator plant.

M&D Construction Group played a significant role in assisting VZI and its engineer, procure and construct contractor (EPC), ELB Engineering Services, to deliver the concentrator in an extremely short timeframe to ensure the timely supply of a high global demand for zinc.

As a leading South African construction specialist, M&D has an impressive track record serving private sector client bodies, and this includes the prominent role its Civil Engineering Division continues to play in delivering high-quality infrastructure to local mining houses.

This Division is headed up by Niek Wagener and Gawie van der Merwe, Senior Contracts Manager, who led M&D's involvement at Gamsberg in building the flotation plant, as well as infrastructure in the milling zone and the thickener area.



Concrete for the concrete roadways is being produced from M&D Construction Group's batch plant on site and transported to the various construction faces by the company's own three-mixer trucks

“We mobilised to site in October 2017 and completed the civils component of the work scope at the end of September this year. To complete the concentrator infrastructure in such a short period of time we grew our team from only 60 people in the initial phases of the works programme to about 300 when the project peaked. Moreover, we had to extend working hours, while still keeping these well within the parameters of the Mine Health and Safety Act, as well as our own strict safety policies and those of VZI and ELB Engineering,” Van der Merwe says.

A further challenge was closely coordinating the civil aspects with the many other construction activities on this multi-disciplinary project. The various contractors had to implement additional measures to ensure the health and safety of their staff working in this confined space and to very tight deadlines.

Van der Merwe attributes much of the success of the civil works to active participation by both the EPC and client, and says that their decision to introduce incentives to motivate and boost the morale of the many workers also greatly assisted the Civil Engineering Division to meet all the milestone dates.

M&D Construction Group’s extensive experience working in this region of the country certainly also stood the team in good stead on this particular project, and this knowledge is now also being applied in the construction of the various roads that will support the mine.

ADDITIONAL ROADS CONTRACT

M&D Construction Group’s Roads & Earthworks Division was awarded the contract to construct the external roads in mid-December and it commenced work on this eight-month project in February 2018. The contract was extended in August this year to also include the construction of the internal plant roads.

This scope increased the value of the contract by 47%, and includes the construction of the access roads from the N14 highway between Pofadder and Aggeneys to the entrance of the mine. This is in addition to various roads and parking areas along the perimeter of and within the plant area.

M&D Construction Group’s Roads & Earthworks Division is also closely associated with technically complex infrastructure programmes for leading South



Heavy-duty access roadways (200 mm thick) are being constructed from fibre-reinforced concrete

African authorities, and is led by seasoned civil engineer, Chris Porter.

Porter says that he is extremely impressed with the progress made by his team, led by Angelo Veli on site. The team comprises about 60 people, including administrative staff and local labour, as well as men and women from the sub-contracting teams.

“There have been numerous challenges, not least of which is the extreme remoteness of this construction site. It is located about 1 000 km from our home base and just under 300 km from Upington, which is the closest major urban centre in the province. Careful logistical planning is therefore required to ensure that the project proceeds according to schedule,” Porter explains.

Meanwhile, the close proximity of the construction works to an environmentally sensitive area adds another level of complexity to the project.

Similar to the concentrator construction programme, close coordination is essential among the many contractors who are all working to tight deadlines on this busy construction site.

The Roads & Earthworks team demonstrated its ability to think on its feet when it was discovered, after construction had already commenced, that material from the various borrow pits for the road layer-works did not meet the engineering design specification.

Porter and his team thus proposed a mechanically blended solution incorporating commercial aggregates sourced from Aroams quarry, located about seven kilometres from the construction site.

He says that three road surfaces have been specified for this project – a Cape Seal for the mostly straight sections, a 200 mm thick fibre-reinforced concrete for the heavy-duty access roadways, and an 80 mm thick interlocking paving for the roads within the plant areas.

Porter says that by the time the Roads & Earthworks Division has completed the

project, it will have undertaken 101 000 m³ of bulk earthworks, and constructed 30 600 m³ of layer works, 12 500 m² of Cape Seal surfacing, 14 900 m² of interlocking paving and 13 500 m of kerbing.

In addition, 8 850 m³ of concrete roadways are being produced from an M&D Construction Group-owned batch plant on site to ease logistics on this project. It achieved the daily production requirement of up to 200 m³ of 35 MPa concrete, which is transported to the various construction faces using the company’s own three-mixer trucks.

The teams on site were fully supported by the M&D Plant Division, which is providing most of the plant and equipment needed to complete the works, and at a high availability level.

CREATING LOCAL JOB OPPORTUNITIES

Rukesh Raghbir, Chief Executive Officer of M&D Construction Group, says that he is proud of the company’s involvement in a project that has also supported so many local businesses and entrepreneurs during the construction cycle.

“Notably, BMM/Vedanta is one of the largest private sector employers in the Northern Cape. Its operations have already created livelihoods for about 1 500 people, while a further 750 people will be directly and indirectly employed by Gamsberg. This is over and above the many employment opportunities that have been created during the construction of this state-of-the-art mine. Gamsberg again demonstrates the critical role that this ‘sunrise’ industry has to play in the socio-economic upliftment of the country,” Raghbir concludes.

Info

Rukesh Raghbir

Chief Executive Officer
M&D Construction Group
+27 11 463 1962
rukesh.r@mdconstruction.co.za