

# LHDA celebrates Polihali diversion tunnels breakthrough

16 August was a milestone Monday for Phase II of the Lesotho Highlands Water project. A cold day following heavy snow in the area, it was the day the LHDA, construction workers and representatives of the supervising engineers and the construction contractor celebrated the double breakthrough of the two diversion tunnels.

*Dual tunnel breakthrough completes 1 870 meters of excavation*

The tunnels, one 7m in diameter, the other 9m in diameter and both almost a kilometer long, were excavated by both drill and blast method. The breakthrough on the same day was also at almost the same time.

“The breakthrough is a significant milestone for the team that has been tunneling for the past fourteen (14) months. It celebrates progress achieved despite challenges such as the COVID-19 pandemic, harsh weather conditions, flooding of the Senqu River which affected the construction site in January 2021 and other social challenges,” stated Paolo Campanella, SCLC-JV contractor’s representative.

Excavation inside the two Polihali diversion tunnels commenced in June 2020 and mostly advanced from the outlets. The completed works on the contract include excavation of the portals and the in-situ reinforced concrete lining of the inside walls of the two tunnels for approximately 35m from the entrance of both tunnels. Ongoing works include finalization of construction of the concrete intake structure on the 9m diameter tunnel. Construction of the intake structure on the ancillary 7m diameter tunnel is almost complete. The remaining works include invert concrete lining for the overall lengths of the tunnels and some minor surface works.



MSKC-JV designed the tunnels and is leading the construction supervision. Resident Engineer, Ntsoeleng Mohale said the breakthrough was a long-awaited event which marked the end of the critical stage of tunneling. “We are proud of the double breakthrough. It has been a long and challenging journey to get here but we made it thanks to the expertise and dedication of many people. For some of us this is one of the biggest milestones of our careers, while for the young professionals, the project has provided invaluable experience in tunneling.”

Ntsoeleng is a product of the LHDA’s “on-the-job training” programme which jump started engineering careers for young professionals during the first phase of the Lesotho Highlands Water Project. Understanding the value of his own experience underpins his passion for mentoring the young engineers currently working on the diversion tunnels project under the LHWP Phase II Young Professionals Programme. “We have seen these young engineers move from training to performance level and I’m proud that they contributed immensely towards the breakthrough. The exposure and experience gained on this contract will increase their marketability in the job market.”

“I am grateful for the mentorship of a team of experts in various facets of project management and the unique tunneling construction experience I have gained. The LHDA young professionals’ mentorship programme is contributing to an innovative generation of engineers that have to come up with solutions to tackle the challenges facing society today,” Sechaba Mokhali, a young civil engineering technologist confirmed.



***Diversion tunnels divert the river’s water from its natural path to create a dry area for the Polihali Dam construction***

The LHDA advanced the construction of the diversion tunnels to enable the dam contractor, once appointed, to immediately focus on diverting the river through the tunnels instead of the traditional approach of incorporating the diversion tunnel works as part of the dam construction scope. As a result, the dam contractor will also have earlier access to the river section than normal.

The contractor, the SCLC-JV, which comprises the South African Salini Impregilo S.p.A, Cooperativa Muratori Cementistri CMC di Ravenna (South African branch), Lesotho-based LSP Construction (Pty) Ltd and South African CMI Infrastructure Ltd is constructing the tunnels under the supervision of the Metsi a Senqu-Khubelu Consultants Joint Venture (MSKC-JV) which also designed these diversion tunnels.

The supervising Engineer, MSKC also includes a number of South African and Lesotho-based firms viz. Zutari (SA), Hatch Goba (SA), Knight Piesold (SA), SMEC (SA), and FM Associates (Lesotho), S5 Construction Consultants (LSO), White Life Consultants (LSO)

The diversion tunnels construction contract was awarded in February 2019 and its completion is planned for end of this year 2021.

