

NEWSLETTER

WSSA *Up*



MESSAGE FROM OUR MANAGING DIRECTOR

As the year 2017 draws to a close, it provides us with a good opportunity to share with you, our clients and partners, to reflect on some of the successes of the year and draw lessons from whatever challenges may have been experienced in order to do things more efficiently in the future.

2017 has largely been a successful year for WSSA during which a lot was achieved. One of the key achievements was the re-certification of WSSA by Bureau Veritas against ISO 9001, ISO 14001 and OHSAS 18001. This confirmed WSSA as one of the very few companies of similar nature to be triple-ISO certified. The further expansion of WSSA's portfolio of activities beyond the traditional Operations & Maintenance necessitated some structural changes at Senior Management level for better focus and efficiencies. The success is borne out by the new contracts in both Operations & Maintenance and construction that were won and implemented/completed successfully during the course of the year. It is our hope that we will be able to announce more work awarded before the year is out.

Credit for these achievements does not go to individuals but to the various teams, departments and regions that worked collectively and tirelessly (with a little bit of help from Senior Management) to ensure that the targets that were set were achieved and some exceeded.

As a growing organisation we need to continuously strive for improvements of our services in order to distinguish ourselves from the rest. It can only serve to further cement our credibility and improve relations with clients in the various regions where we operate.

On behalf of the Board of WSSA, let me take this opportunity to wish you and your loved ones a well-deserved break over the festive season and a prosperous 2018. Please drive (and walk) safely on the roads.



All the best

Dumi Luthuli
Managing Director



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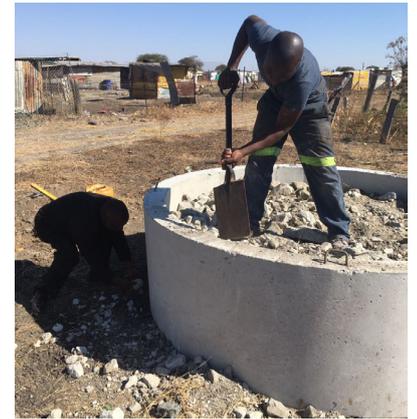
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RUSTENBURG WATER SHORTAGE - WATER COLLECTION POINTS

During September 2017, the Community of Rustenburg experienced water shortages. After overcoming many challenges, WSSA interacted with the Municipality and implemented a CSR project to establish water collection points.

The WSSA Rustenburg CSR Team as led by Mr Tiaan Van Dyk, and overseen by the Operations Manager, Mr Lizo Buti. The supporting team members were Mr Johan Jansen Van Vuuren (Maintenance) and the Mr Gordon Khumalo (Roving inspector).

The tanks for the water collection points were supplied by WSSA but will be maintained by the Rustenburg Local Municipality.



K KGWAILA - FAREWELL

On Thursday 29th June 2017 the King Cetshwayo District Municipality team in KZN bid farewell to Kgomotso Kgwaila who has until 30th June 2017 headed the team as its Operation Manager. Kgomotso has been part of the King Cetshwayo contract for the past 12 years and started as an Area Manager in 2005. He was then appointed as the Operations Manager in 2010. He is taking up a new role as Regional Manager ROSA based at the head office in Woodmead, Johannesburg effective 1st July 2017.



King Cetshwayo District Municipality area management and supervisory staff bidding farewell to Kgomotso in Richardsbay.

FICKSBURG WATER SCHEME PHASE 2 PROJECT

This project has been successfully completed by the Free State team who achieved practical completion in October. The team is still on site carrying out additional work ordered by the client. This project which was carried out for Setsoto Local Municipality and funded by the Department of Water and Sanitation (DWS) under their RBIG programme will augment the water supply to the Ficksburg and Meqheleng areas which have been plagued by water shortages during the recent drought.

Following on the success of Phase 1 which was reported on in a previous newsletter this work plus extras which bring the total project value up to R63 million, was awarded to WSSA. The work included the construction of:

- A new 630mm MPVC pipeline from the Meulspruit Dam to the Ficksburg WTW, a distance of nearly 8km of which nearly half was through a built-up area
- A river crossing of 600mm diameter steel pipes on concrete pillars
- Upgrading of the Meulspruit pump station including pump plinths, pumpsets, VSDs, panels and cables.
- Associated valves, chambers, thrust blocks and other structures
- Pipe-jacking of a 1200mm diameter concrete sleeve under a Provincial road

Variation Orders (VO) were issued for additional work comprising:

- watermains, a sewer outfall, a booster pump stations and an elevated steel water tank
- pipe-jacking of an additional 1200mm diameter concrete sleeve under a railway line
- additional steel sections
- a new transformer for the pump station

Challenges Experienced

The team encountered a number of challenges which required some innovative techniques not found in any text books! These included:

- The construction of a 140m long pipe bridge on concrete columns across a river which seemingly had no bed and swallowed up excavators and any other items which ventured into the riverbed. Eventually piles had to be sunk in order to provide stable foundations for the columns.
- Due to the water shortage we were not permitted to test short sections of pipeline as it progressed and had to test the complete line upon completion. The team had to manufacture special fittings to achieve this. A pressure of 16bar on a 630mm diameter produces enormous forces. Through the perseverance of the team the line did eventually pass its pressure test.
- The Meulspruit dam was quite empty for long periods of time but when the time came to connect the new fittings on the outlet of the dam it was full! Commercial divers had to be sent down to the outlet pipes to install the plugs to block off the flow. The day chosen for this operation turned out be a chilly -5 degrees. Not really weather for diving...
- Ficksburg sandstone is a really tough and durable material which has been sent all over South Africa for use in Sandstone buildings. It is not easy to dig through though especially in areas where blasting cannot be done.
- The line had to go through a swampy area which DEAT decided was a wetland and needed an EIA to be done.

This project was carried out under the Construction Regulations, 2014 and as such a high level of Health & Safety performance was required. The site was audited monthly by an external H&S practitioner appointed by the client. The close cooperation between our construction team and our SHEQ team led to excellent audit results of over 95% being achieved. This project and its neighbour in Clocolan have been used to develop skilled pipe-laying and concrete teams which will enable us to carry out further work without having to rely on sub-contractors. This will certainly boost our competitiveness.



ANOTHER DAM AWARD

Our Zana Manzi-WSSA-Amamz-aBantu Joint Venture received a second award for the recently completed Mndwaka dam near the Hole in the Wall in the Eastern Cape. This time it was a Fulton commendation award for infrastructure awarded by the Concrete Society of South Africa at their annual award ceremony. Well done to our JV team for the tremendous effort, hard work and long hours they put into this project, as well as the many innovations and techniques they developed to make the construction and quality control easier. Thanks also to the Client's professional team, Sontinga Consulting Services in association with ARQ Consulting Engineers who kept us on our toes particularly for the stringent quality control requirements needed on this project.

The Mndwaka Dam is Southern Africa's largest and highest Rubble Masonry Concrete (RMC) multiple arch-buttress dam, with a height of just under 30 m and span of almost 315m. Over 30 000 m³ of RMC were placed by hand in the dam wall over the three year contract period. After treatment at the water treatment plant, the dam provides potable water to 40 000 people in 63 rural villages through the new Mncwasa Water Supply Scheme, with Zana Manzi again being involved in the construction of the water distribution system.

RMC concrete involves progressively building a 500mm rock narrow rock wall on both sides on the dam wall and filling the gap in between by packing graded rock in a mortar bed. These layers were repeated until the top height of the wall is reached. Finally a structural concrete Ogee spillway was constructed to cater for the dam overflows. What is really amazing is that this dam was effectively built by hand, with no formwork or cranes, other than a blondin (aerial cableway) that was able to offload the rock at only three buttress points on the wall, and then moved with wheel barrows along the wall. We also provided our own crushing plant for producing the stone and sand, as well as a mixing plant, for the mortar.

RMC dam construction offers advantages in terms of lower cost on a small scale and in a remote location, but most importantly it created over 1.3 million hours of employment opportunities in rotation within the local communities, to ensure all benefitted from this project. This is over five times the hours that would have been spent on a conventional concrete dam of this nature, but the overall cost was around 60% less expensive. This approach was also linked to a strong commitment to skills development and our Health and Safety programme, with only a few minor lost time incidences over the three year contract period.

By using rubble masonry concrete technology, the Mndwaka Dam blends ancient manual construction methods with state-of-the-art design and construction techniques, demonstrating this technology to be an efficient and highly cost-effective method for the labour-based construction of small and medium-sized dams. As importantly, the rustic finish and architectural geometry of the dam blends well into the beauty of its natural surroundings with a minimal impact on the environmental landscape.

Again, well done to the entire team on this construction milestone achievement.



Mndwaka Dam – Rubble Masonry Multiple-Arch Buttress Dam