

Bell products and support keep Fraser Alexander a step ahead

When looking at what is commonly known as a mine dump, few people will realise that they are actually looking at a dam for which the proper term is a tailings storage facility or TSF and while the mine that it serves is still active, that facility is a dynamic structure that needs to be designed, built and maintained with extreme care.

Tailings is the slurry waste created by a variety of mining processing plants and when cousins, Fraser and Fred Alexander, first started using cocopans to remove these tailings from the Witwatersrand gold mines over a century ago, in 1912, little could they know that the essential service that they had started would grow into the vibrant group that Fraser Alexander is today.

This South African-based, black-owned group has operations across 10 African countries, including South Africa, as well as Peru, Brazil, and Chile in South

America. Fraser Alexander provides material handling, mineral processing, mining, re-mining, water treatment and tailings management services to the mining industry.

Jack Reabow is the Senior Plant Manager at the Fraser Alexander Tailings Management Division, which manages over 100 TSFs, and he tells us more about what the division does in offering such essential services to the mining industry. "Our division mainly handles two aspects of the business," he says.

"Firstly, we design, build and maintain tailings storage facilities and secondly, we re-mine older facilities with hydro-mining for reprocessing as the extraction techniques have now been refined to further extract saleable commodities such as gold and platinum from the 'mine dumps'."

The recent failure of a TSF at Jagersfontein in the Free State has once again placed emphasis on maintaining the integrity of these facilities to ensure the safety of the people and property in the area surrounding such a facility. This filters through to leading companies in this field such as Fraser Alexander is known to be.

"Given the nature of our work in having to move large amounts of earth and slurry, you would appreciate that we use earthmoving equipment of various types and sizes, and during the last two years some of our excavators had reached the end of their productive lives at between 15 000 and 18 000 hours," Jack explains. "We use an on-key maintenance system called PRAGMA to create a full-service history prior to selling the equipment on auction that further aids us in obtaining better rates for the older equipment."

Fraser Alexander favours two sizes of excavator, a 20-ton and a 12-ton machine. The application of a particular size is often determined by the underfoot conditions where the excavators will work as softer ground demands a lighter machine is used.

"While extending a TSF on a large mine near Lydenburg we had rented an excavator which turned out to be a Kobelco SK220XD machine. This model so impressed us with its superior production and frugal fuel consumption figures that we took a conscious decision to replace our fleet of 20-ton machines with Kobelco SK220XD models of which we now have seven," he says. "We're also keen to look at the Kobelco SK135SR model at 13,5 tons to slot into the 12-ton size application and have made enquiries about this particular machine with our Bell Sales Representative, Ebrahim Astree."

Jack expands on their reasoning for buying the Kobelco SK220XD Excavators mentioning that as a truly South African brand, Fraser Alexander is keen to support similar local companies such as Bell Equipment. He says the pricing on the Kobelco Excavators was favourable compared to other





similarly weighted machines and the excellent fuel consumption, in an era of ever-increasing fuel costs, was a major influencer on their decision. Ultimately the Bell Care Package that Bell Equipment offered, as the Southern African distributor of Kobelco Excavators, swung their vote. Under this Care Package, lasting 36 months or 6 000 hours, all servicing and repair would be done by Bell Equipment.

"We've been impressed by the design of the Kobelco's undercarriage as when we work on top of tailings dams, we 'walk' any excavator a lot meaning that we move it around to various places where it is needed, and often in abrasive and wet material," Jack continues. "We check on how many rollers and track guides there are to minimise the strain on the tracks and undercarriage and the Kobelco's design really suits our application in this regard."

Jack adds that as far as daily and regular maintenance checks are concerned, the placement of the filters and other maintenance points on the Kobelco Excavators makes it easy to do daily checks while standing on the ground. This avoids operators having to climb on top of the machine, which can be deemed a safety risk.

Fraser Alexander's Kobelco SK220XD Excavators have varied uses of which building the walls of tailings facilities, preparing platforms for hydro-mining equipment to operate from, and digging trenches that will convey the hydro-mined slurry to a catchment area, are key. The Kobelco Excavators are also used to place the large-diameter HDPE pipes into areas where the tailings will be pumped. With all this activity, an average fuel burn of 14 litres per hour has impressed the Fraser Alexander teams. The company does diligent fuel and lubrication sampling that is sent away for analysis.

"Despite the wet material we work in, we still have to contend with hot, dry and dusty conditions and this has prompted us to buy the Kobelco Excavators with third-party automatic lubrication systems that Bell Equipment fits for us pre-delivery," Jack says. "We insist on servicing every 250 hours as experience has taught us that this type of preventative maintenance ensures the longevity of machine life. It also supports our Environmental Social Governance (ESG) concern of lowering our carbon emissions."

When re-mining older TSFs, Fraser Alexander is tasked with removing the top layers of soil to gain access to the richer residue-bearing soils lower down and to do

this they employ a fleet of Articulated Dump Trucks (ADTs). "At some of our operations near Rustenburg we had a fleet of Bell B25D ADTs that had clocked really high hours over the 15 years we used them, and these were replaced in March 2023 with three new Bell B20E ADTs," he says. "The reason for choosing the Bell B20E ADT is that Bell Equipment is the only ADT manufacturer with a vehicle in this class that can be registered for use on a public road, which is where these ADTs need to run at times, and do so without an escort vehicle."

"The 15 years of sustained service we were able to extract from the older fleet of Bell B25D ADTs points to Bell Equipment's legendary sound design and build and made buying another model ADT from the same company an easy decision."

The Bell B20E ADTs run in cycles of 3 to 5km and with even torque distribution over the three axles Jack and his teams are confident of good tyre life. They are enjoying the benefits of the full Fleetmatic® monitoring system and get regular updates on their average fuel consumption per hour and loads carried.

Considering the nature of Fraser Alexander's many varied tasks in the Tailings Management Division, no fleet of earthmoving equipment would be complete

without the use of a versatile tool such as a backhoe loader and the company recently replaced an older machine with a new JCB 3CX Global Backhoe Loader.

"We had no hesitation in choosing the JCB 3CX Global machine as its reputation as a robust tool precedes it and having the backing of Bell Equipment as the South African distributor is a bonus not be sniffed at," Jack says. "It was competitively priced even with a third-party lubrication system fitted and a Bell Care Package to 24 months or 4 000 hours."

This versatile machine is currently being used on a mining site near Brakpan where it is used to dig trenches for piping, packing material into retaining walls, and levelling platforms. Its fold-over forks have proven incredibly handy in loading and unloading wooden pallets of consumable materials. Access to JCB's LiveLink monitoring system ensures weekly downloads of essential performance data.

"We're well pleased with the new additions to our earthmoving fleet and knowing we have the backing of a solid company such as Bell Equipment for the care and maintenance of these new machines gives us the confidence to continue with our essential services, which at their core come down to protecting our environment," Jack says.



Jack Reabow, Fraser Alexander's Tailings Division Senior Plant Manager, with one of the 15-year-old Bell B25D ADTs.