

**Job Report**

Mining Excavator

**R 9100**

**The Liebherr R 9100 Mining Excavator**

at Cobre Panama copper mine, Panama  
Operated by First Quantum Minerals Ltd.



**LIEBHERR**



### Key Facts

- Cobre Panama, one of the largest copper project in Latin America
- Current operating fleet: 8 x R 9100, 2 x R 9350, 12 x PR 744, 4 x PR 754
- Outstanding machine availability of up to 98 %
- Liebherr tailored logistics to support FQM activities
- Liebherr on-site product support personnel
- High performance through Liebherr bucket solution, including GET

### Situation

120 km (75 mi) west of Panama City stands one of the largest copper project developments in Latin America: Cobre Panama. With a surface area of 13,600 ha (33,600 ac), the site comprises four zones and has its own port. Once fully operational, the mine will be able to produce over 320,000 metric tons (352,000 short tons) of copper a year. First Quantum Minerals Ltd. (FQM), a well-established and growing metals and mining company, assumed an 80% equity interest in Minera Panamá, S.A. – the Panamanian company that holds the Cobre Panama concession. FQM has been a loyal customer of Liebherr since 2006 with the commissioning of more than 20 mining machines in the Sentinel copper mine, Zambia.

To achieve the objective of having the mine operational by the end of 2018, FQM chose to work with Liebherr equipment to meet their deadlines. The first Liebherr R 9100 mining excavator was commissioned at the end of 2014 and there are currently eight R 9100 excavators in operation. The fleet also includes two Liebherr R 9350 mining excavators, twelve PR 744 and four PR 754 crawler tractors to achieve this huge task.

## Outstanding excavator availability

The R 9100 mining excavators were delivered with a Liebherr D9512 diesel engine and are equipped with a 7 m<sup>3</sup> backhoe bucket. These R 9100 integrate robust and reliable mining optimized components that are developed, manufactured and controlled by Liebherr, ensuring reliable performance. To reduce downtime and prevent machine damage, the R 9100s are fitted with a piston rod guard for the bucket cylinder. This robust steel cover protects the cylinder from being damaged by falling rocks. Maximum availability is also possible due to the central service station equipped with Wiggins couplings system. This option installed on the R 9100s allows fast refill of all fluids directly from ground level, enabling easy, rapid and safe maintenance conditions for service personnel.

## Liebherr support on site

FQM can rely on Liebherr product support personnel for the on-site assistance of the machines, tasked with the daily challenge of maintaining the highest availability possible by constant monitoring of the equipment.

Liebherr-Mining proposed a tailored logistics solution to support FQM during the mine set-up period. To optimize machine uptime and parts availability, Liebherr provided specially equipped containers for on-site storage of minor parts – considered by FQM as a ready-to-use solution. This is a valuable gain in terms

FQM is confident in the reliability of the Liebherr products which have so far provided highest productivity level with an average cycle times of 22 seconds and an outstanding machine availability of over 90% – but also attaining up to 98% in certain periods. The mining excavators are working 24 hours a day, 7 days a week and have to face the high temperatures and the high level of humidity of the region. The Xenon lighting helps the operator to work in safe conditions during long night operation by providing viewing comfort thanks to a very white, powerful and wide lighting.

of parts management, and is especially appreciated during the project ramp-up phases. Additionally, each part is individually stored and packaged to cope with the difficult climate conditions. The packaging is totally air- and watertight and is designed to be UV resistant. At the same time, it keeps the item in new condition until use and, most importantly, prevents corrosion. Concerning major components, Liebherr set up a consignment stock in the warehouse in Colon, which is handled by a long-term Liebherr partner in order to manage locally this stock of more than 250 individual items.

## Liebherr Ground Engaging Tools (GET): the preferred solution

FQM were offered the opportunity to perform a comparative field test to compare the Liebherr GET system to their current GET brands. In a short time, the Liebherr GET system clearly demonstrated the value of investing in a genuine Original Equipment Manufacturer solution. The customer reported that the Liebherr GET system is the most cost efficient: offering higher productivity and longer service life, owing to the self-sharpening part design. Being a truly hammerless system, the Liebherr GET solution offers superior safety for maintenance personnel. Liebherr further offers optimized logistics solution from factory-to-field as well as providing full on-site service support and training such as bucket design recommendation, lip conversion and welding.

As a result, FQM expressed a strong preference for the Liebherr GET solution, and is now in the process of converting the entire fleet of R 9100 and R 9350 machine buckets to the Liebherr GET solution Z100 and Z140. This is proof that Liebherr is more than an “off-the-shelf” GET supplier - Liebherr is an OEM service provider.





## Technical Data

Operating weight	108.5 tonnes / 120 tons
Engine model	Liebherr D9512, 12 cylinders
Engine output	565 kW / 757 HP at 1,800 rpm
Fuel tank	1,478 l / 390 gal

## Backhoe Attachment

Bucket capacity @ 1.8 t/m <sup>3</sup> (3,035 lb/yd <sup>3</sup> )	7 m <sup>3</sup> / 9.2 yd <sup>3</sup>
Liebherr Ground Engaging Tools size	Z100, CL-profile
Max. digging force (ISO 6015)	415 kN / 93,296 lbf
Max breakout force (ISO 6015)	560 kN / 125,893 lbf