

# Mining Excavator

# R 9800

## Job Report

Liebherr Mining Excavators located at a coal mine in East Kalimantan province, Indonesia. Operated by PT Kaltim Prima Coal (KPC).



# LIEBHERR

## Situation

PT Kaltim Prima Coal (KPC), a majority-owned subsidiary of Bumi Resources Tbk, is the world's largest exporter of thermal coal. KPC operates a coal mine in East Kalimantan province under a contract granted by the government in 1982 that will remain valid until 2021.

KPC's coal concession is located around Sangatta, some 50 km north of the equator on the east coast of Kalimantan Island, 180 km north of the provincial capital Samarinda. The mine currently covers an area of 90,938 ha and is situated in a rainforest with annual average temperatures close to 30° C (86° F) and year-round humidity levels up to 80%. Average annual precipitation level can reach 2.500 mm (98 inches). Considering these mining conditions, reliable products and dedicated customer support are the keys to success in this region.

## Assignment Report

With an initial production capacity of around 1,8 million metric tonnes (2.1 million tons) in 1991, KPC has steadily increased its coal production to 40,5 million metric tonnes (44.6 million tons) in 2011. With a current production capacity of 46 million metric tonnes (51 million tons) per year, KPC expects coal output to reach 43 million metric tonnes (47.4 million tons) in 2012 (+ 6%).

In order to satisfy increasing global demand, Bumi Resources Tbk is proceeding with a growth strategy to expand its mining properties and to increase production in order to deliver more coal to global markets. To meet this plan, reliable, higher capacity loading and haulage equipment with low maintenance costs were identified as a necessity.



## Solution

In 2012, KPC is utilising a fleet of eighteen Liebherr R 996 and R 996 B hydraulic excavators, in both front shovel and backhoe configurations, and two Liebherr R 9800 hydraulic backhoes in conjunction with a fleet of thirty one Liebherr T 282 B mining trucks (among others). KPC has already purchased an additional unit of Liebherr R 996 B and a third Liebherr R 9800 which are expected to be commissioned by the end of 2012.

Designed for large scale mining operations, these machines were purchased to deliver a superior rate of productivity while minimising the operating and owning cost per BCM moved. Today, KPC's Liebherr fleet of mining equipment efficiently contributes to Bumi Resources Tbk reaching their forecasted yearly production increase and sustaining their ambitious economical growth plans.



## Performance

The first Liebherr R 996s were delivered to the KPC operation in 1997. Since their commissioning, these excavators have continued to offer consistent reliability and minimal downtime. The oldest units have accumulated over 100,000 operating hours with an annual usage close to 6,700 hours. The Liebherr fleet operates six open coal pits in KPC mine site, 24 hours a day, 365 days a year.

Driven by two powerful diesel engines offering a combined output of 2.982 kW (4,000 HP), both of KPC's Liebherr R 9800 backhoes provide extremely rapid loading cycles, as low as 28 seconds per pass. Boasting a bucket of 45 m<sup>3</sup> (59 yd<sup>3</sup>) to load overburden with a loose density around 1,6-1,7 t/m<sup>3</sup>, both Liebherr R 9800 backhoes offer instantaneous production capacity of around 3.750 BCM/hour and 3.000 BCM/hour in long term production. Offering an extremely low rate of fuel consumption, and equipped with an oversized fuel tank of 19.690 L (5,202 gal), the R 9800 offers more than 35 hours of fuel autonomy contributing to the maximisation of machine uptime to minimise KPC's global cost per tonne of coal.

The KPC fleet of R 996 and R 996 B reflects 50 years of Liebherr experience in hydraulic excavator design and manufacturing by exceeding the customer's expectations in terms of reliability. Driven by a 2.237 kW (3,000 HP) diesel engine and boasting a 34 m<sup>3</sup> (44 yd<sup>3</sup>) bucket, these machines in face shovel configuration reach an average long term productivity of 2.100 BCM/hour and 3.000 BCM/hour of instantaneous production. The robust central service station accessible from the ground level allows for fast fluid refilling and drainage, and contributes to maximum availability.

The R 9800 excavators are used largely in conjunction with Liebherr T 282 B mining trucks. The T 282 B can be loaded in around 4 passes by the R 9800 and in 6 passes by the R 996 and R 996 B. In this way KPC's fleet of Liebherr hydraulic excavators help fulfill KPC's increased production requirements.

Day to day maintenance requirements are addressed by the Liebherr on site service support centre, PT Liebherr-Indonesia Perkasa. Maintenance is performed on a contract basis with initial operator and maintenance training provided by Liebherr Mining Equipment factories.

## Technical Data

### R 9800 Backhoe Attachment

Operating Weight \_\_\_\_\_ 800.000 kg / 1,763,700 lb  
Engine Model \_\_\_\_\_ Cummins QSK60 (USA/EPA Tier2)  
Engine Output \_\_\_\_\_ 2x 1.492 kW / 2x 2,000 HP at 1,800 rpm  
Bucket Capacity (ISO 7451) \_\_\_\_\_ 45 m<sup>3</sup> / 59 yd<sup>3</sup>  
Max. Digging Force (ISO 6015) \_\_\_\_\_ 1.760 kN / 395,664 lbf  
Max. Breakout Force (ISO 6015) \_\_\_\_\_ 1.980 kN / 445,121 lbf

### R 996 B Face Shovel Attachment

Operating Weight \_\_\_\_\_ 676.000 kg / 1,490,300 lb  
Engine Model \_\_\_\_\_ Cummins K 1800 E  
Engine Output \_\_\_\_\_ 2x 1.120 kW / 2x 1,500 HP at 1,800 rpm  
Bucket Capacity (ISO 7451) \_\_\_\_\_ 34 m<sup>3</sup> / 44.5 yd<sup>3</sup>  
Max. Crowd Force  
at Ground Level (ISO 6015\*) \_\_\_\_\_ 2.245 kN / 504,696 lbf  
Max. Crowd Force (ISO 6015\*) \_\_\_\_\_ 2.330 kN / 523,804 lbf  
Max. Breakout Force (ISO 6015) \_\_\_\_\_ 1.930 kN / 433,881 lbf

\* including attachment weight

# The Liebherr Group of Companies



## Wide Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

## Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical application.

## State-of-the-art Technology

To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

## Worldwide and Independent

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 120 companies with over 35,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

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