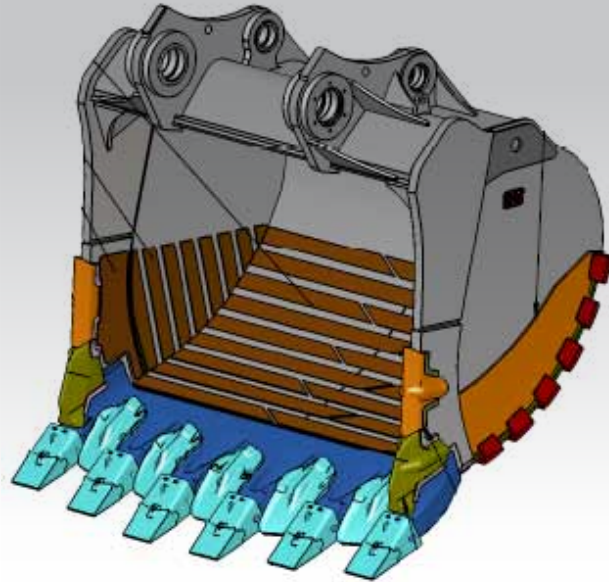

Case Study

MINE EXCAVATOR BUCKET CAPACITY MODIFICATION

HUNTER VALLEY
NSW MINE SITE

2013



PROBLEM

The mine site approached Austin Engineering with an issue that their backhoe bucket fitted to their recently purchased excavator was not reaching anticipated productivity figures.

This was a surprise as other machines of the same type in the area, and the Bowen Basin, were reporting the opposite.

SOLUTION

Austin Engineering conducted an analysis of the machine and discovered that it was fitted with a 30m³ capacity bucket rather than the standard 34m³ bucket (the standard offering for coal overburden of around 1.8mt/m³ density). The excavator OEM had recommend caution based on the material density and abrasiveness at this site.

As the bucket had completed its service cycle (9000 hours) and was scheduled for major repairs including replacement of the floor, it was agreed that Austin Engineering would do some initial engineering work to establish the feasibility of resizing the bucket to 34m³ capacity.

Austin Engineering produced an FEA report, which included a pass match for the mine trucks on site. This report was based on maintaining the existing cast lip, and therefore the bucket width, and adding additional wear plate to strategic areas while maintaining the machine's maximum suspended load requirements.

After co operation between the mine site, the OEM dealer and Austin Engineering the work was carried out at Austin Engineering's Muswellbrook facility and was returned to service in July 2013.

Reports from site, including the excavator operator, indicate that the bucket was digging well and productivity was greatly improved.

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