

CASE STUDY

HARD FACING GRADER BLADE TRIAL



PROJECT

GRADER BLADE TRIAL

CLIENT

MINERAL RESOURCES LIMITED

OVERVIEW

Mineral Resources Limited (MRL) operates a vast fleet of heavy machinery across some of Western Australia's largest gold and iron ore mines. The demanding conditions on these sites result in significant wear and tear on Ground Engaging Tools (G.E.T.), leading to high replacement costs. In particular MRL was experiencing very high wear rates on the G.E.T. deployed at a large iron ore mine in the Pilbara region. Recognising the potential for cost reduction, MRL saw an opportunity to explore more economical alternatives without sacrificing the quality or performance of their essential G.E.T. parts.

To address this, MRL initiated a trial with Mining Wear Parts (MWP) to test which supplier's grader blades performed best on this site. By sourcing parts directly from MWP, MRL aimed to achieve substantial cost savings, gain better control over their G.E.T. supply chain, and reduce reliance on third-party suppliers.

Additionally, this partnership offered the possibility of developing custom solutions tailored to MRL's specific project requirements, which were not available through existing suppliers.

PROBLEM

Mineral Resources Limited relies heavily on G.E.T. for its heavy machinery and is facing escalating costs as operational demands grow. These costs are projected to rise further in 2024/25, especially for critical heavy machinery components like Grader and Dozer blades, which are currently sourced from third-party suppliers. Compounding the issue are persistent supply chain constraints, which threaten production continuity if G.E.T parts are unavailable.



RESULTS

100%

Longer lifespan when compared to OEM blades

77.5

More hours of use out of our blades before replacement

≈\$1800

Saved in material, labour and downtime costs by using our blade



SOLUTION

MRL engaged MWP to undertake a trial to compare the wear rates of the OEM's blades against our blades. During the trial, MRL operated their machine (with OEM blades installed) for 6 hours before measuring their wear rates. MRL then replaced the OEM blades with our hard-facing blades. Our blades were then measured periodically over three days to compare the wear rates of our grader blades against the original OEM blades.

The trial revealed significant differences in performance, highlighting the durability and cost-effectiveness of our hard facing blades.

The OEM blades showed a wear rate of approximately 1.67mm per hour, lasting around 77.5 hours before requiring replacement. In contrast, our blades demonstrated a much lower wear rate, ranging from 0.3mm to 0.38mm per hour during the first two days of the trial.

The final measurement, taken after 155 hours of operation, showed the MWP blades maintained an average wear rate of 0.83mm per hour, effectively doubling the lifespan of the OEM blades.

This durability, combined with a lower overall cost compared to the OEM blades, suggests that our blades offer superior performance and significant cost savings by reducing the need for frequent replacements and minimising downtime. By avoiding a scheduled change out of the blades our client saved on the cost of an extra blade set, the labour expenditure linked to the blade swap, and also an unproductive period during which the machine wasn't in use.

BENEFITS

COST SAVINGS

- By sourcing G.E.T. parts from Mining Wear Parts (MWP), MRL achieved significant cost reductions compared to traditional suppliers, leading to substantial financial savings.

ENHANCED DURABILITY

- MWP G.E.T. parts demonstrated superior wear resistance and longer lifespan, reducing the frequency of replacements and minimising costly downtime.

IMPROVED SUPPLY CONTROL

- MRL gained better control over their G.E.T. supply chain, ensuring reliable inventory and reducing dependency on third-party suppliers.

CUSTOM SOLUTIONS

- MWP's ability to develop tailored G.E.T. solutions addressed specific project needs, offering options that were not available from existing suppliers.