MINING
WEAR PARTS

CASE STUDY

C125
LINER REDESIGN

PROJECT

C125 LINER REDESIGN

CLIENT

NORTHERN STAR RESOURCES

OVERVIEW

Northern Star Resources Limited (Northern Star) is an Australian gold producer known for its Tier-1 world-class projects located in highly prospective regions of Australia and North America.

At its Jundee operation in Western Australia, the company operates a conventional carbon-in-leach (CIL) plant circuit, which begins with a single toggle overhead eccentric swing jaw crusher.

PROBLEM

Northern Star faced an issue with the primary C125 Norberg jaw crusher at its Jundee operation. The company's primary challenge was the need to extend the life of both the fixed and swing liners. The existing 2-piece configuration of the liners caused unnecessary movement, resulting in premature wear on the middle wedges.

RESULTS

71%

Increase in wear life

5

additional weeks of usable wear life

70%

Longer wear life per liner on average

SOLUTION

Utilising Northern Star's operational data and drawing on industry experience, our in-house engineering team at Mining Wear Parts redesigned the jaw crusher assembly. The modification involved changing the configuration from a 2-piece to a 1-piece design to prevent unnecessary movement and reduce wear. Additionally, the liners' material was upgraded to heavy-duty Ceramic Metallic Inserts (CMI), designed to maximize the usable wear life and reduce operating costs tied to early changeouts.

The strategic redesign and material upgrade by MWP have significantly extended the life of both the fixed and swing jaw liners in Northern Star's C125 primary crusher. These improvements translated to a 71% increase in usable wear life, extending it from 7 weeks to 12 weeks, thus adding 5 more weeks of productivity. Further innovation ensued, with Northern Star requesting MWP to continue supplying high-quality aftermarket parts for their C125 crusher and HP6, including ongoing assistance with liner development for the HP6.

BENEFITS

- 71% increase in the lifespan of fixed and swing jaw liners in the C125 primary crusher.
- Extension of usable wear life from 7 weeks to 12 weeks.
- Added 5 additional weeks of productivity.
- Reduced operating costs associated with early liner changeouts.
- Continued collaboration with MWP for premium replacement parts and further assistance with liner developments for the C125 crusher and HP6.