PROJECT REFERENCE

PROJECT NAME GRINDING MILL ROCK-BOX CHUTE LINERS

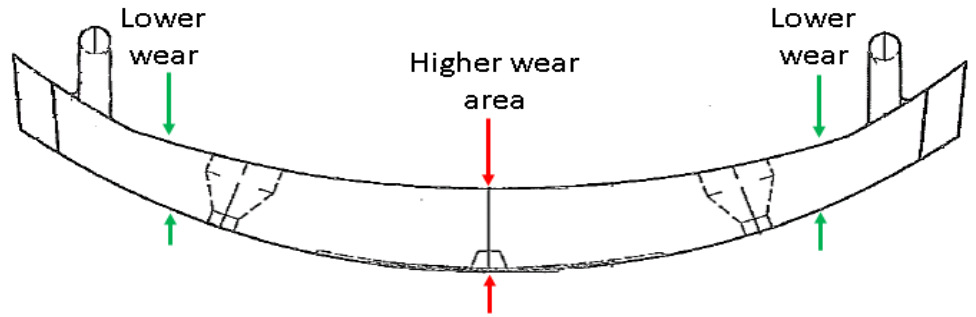
LOCATION: N.T AUSTRALIA **CLIENT: URANIUM ORE PROCESSING PLANT** **STATUS: ON-GOING SUPPLY**

TIME OF ASSIGNMENT: 2014 TO 2017 **CONTRACT VALUE: $150k+**

PROJECT BRIEF: Due to production outages caused by premature failure of OEM Bisalloy 400 feed chute liners, Castech was asked for a proposal to increase life without modifications to the supporting structure.

A site evaluation identified extreme erosive and corrosive operating conditions. Castech identified opportunities to solve the customers problem thru a combination Liner Design and Material selection:

1. Liner Design.
   - Prevent 'racing' between mating liners; by taking advantage of the freedom of shape that casting allows, our engineers designed a saw tooth solution staggering the mating joints to minimize the "racing" erosion of the original continuous joint line design
   - Variable Thickness to balance wear; the sectional thickness was increased in the high wear zones to balance the wear rate across the entire liner and extend service life.
   - Reduce Change out time and improve safety; redesigning the Liners offered an opportunity to reduce the change out time by introducing a reverse taper edge design, allowing worn liners to be easily replaced without having to remove the adjacent liners.



Contact Details:
Unit 4, 5 Hines Road, O'Connor, Western Australia 6163. | P: +61 8 9331 4099 | F: +61 8 9467 6237 | E: enquiry@castechsolutions.com.au | www.castechsolutions.com.au

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2. Material Selection

- Minimising erosive and corrosive wear; analysis of operating conditions highlighted corrosion as a major contributor of wear due to the pH 3.4 process water. High Chrome White Iron was specified because its properties provide a combination of abrasive wear resistance with a bulk hardness in excess of 600HB plus Cr carbides in the matrix (compared to Q&T Plate @400HB) AND corrosion resistance in process water of pH 3.0 to 9.5 (compared to quench and tempered plate at pH 5 – 8).

Castech's solution extended the wear life from 5 weeks to >16 weeks.

Change out times reduced by 2/3rds.

Castings' freedom of shape allowed Castech to optimise the Chute Liner design.

Combined understanding of operating conditions and material properties results in wear life extension.

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