

Industry: Agricultural Processing
End User: Tres Valles Sugar Mill (Ingenio Tres Valles), Veracruz, Mexico
Application: River Water Intake Pump
Thordon Grade: SXL
Date of Original Installation: May 2023

About:

The Tres Valles Sugar Mill was established by the Mexican Federal Government in 1978 and has been under the operation of the PIASA Group, Promotora Industrial Azucarera, SA de CV since 1988. With a grinding capacity of around 13,000 metric tonnes (14,330 short tons) of cane per day, the plant yields over 1,500 metric tonnes (1,654 short tons) of sugar within a 24-hour period. Its supply area spans approximately 40,000 hectares (98,842 acres), primarily rainfed, and is cultivated by over 3,500 sugarcane producers.

Challenge:

The end user was experiencing frequent breakdowns in their river water intake pump. This was due to visible vibration caused by premature wear of its bushings which significantly impacted the reliability and efficiency of their operations. Initially, the pump utilized a type of PTFE bearing material, which proved to be ineffective as it only worked for 20 days. Subsequently, the end user switched to bronze-backed rubber bearings, which provided marginal improvement but still failed after approximately 90 days. The frequent breakdowns and premature wear of these pump bearings led to a number of challenges for the end user including increased maintenance costs, skilled labour requirements, the cost of spare parts, and increased downtime.

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Solution:

The end user became familiar with Thordon through a program spearheaded by our authorized distributor in Mexico, TZ Industrias, that aimed at introducing Thordon's materials into the operational frameworks of the 52 sugar mills across Mexico. Through this initiative, the end user recognized the potential of Thordon's advanced engineering solutions in addressing their persistent challenges with pump bearings.

TZ Industrias recommended Thordon's SXL material which has exceptional wear resistance and low friction properties, making it an ideal choice for applications where durability and efficiency are important. The low friction and wear rates of SXL contribute to smoother operation of the pump system. By opting for a material with superior wear life, the pumps would no longer vibrate which addressed the root cause of the end user's frequent breakdowns.

Result:

Thordon SXL was first installed to a river water intake pump at Tres Valles Sugar Mill in May 2023 and has been operating without issue since. A second pump was also fitted with SXL in February 2024. Thordon's SXL bearings are projected to provide substantial benefits over an extended period in this application, with an anticipated lifespan ranging between 12 to 14 months. The installation has yielded significant cost savings for the end user, with an estimated saving of US\$12,000 per pump.

As a result of the SXL bearings' performance in these pumps, the end user is actively considering Thordon's solutions for additional applications. Specifically, they are considering the use of ThorPlas-Blue for the sugar cane train wheels and thread pulleys of the cane turners.

