

## Success Story

Industry: Quarrying, Mining and Construction

Application: Conveyor Tail Drum

**Cost Savings: € 6 272**

### Introduction

A quarrying company was experiencing short service life on its conveyor tail drum take-up unit. Located in an inaccessible area beneath a shaker screen, the unit's bearings were subjected to particularly arduous conditions due to their exposure to the elements. This situation was compounded by the fact that regular re-greasing was a difficult task due to the remote bearing location, subsequently leading to regular bearing failure and costly conveyor downtime. NSK analysed the bearing application and found that water and grit were entering the bearings and causing failure. A trial was suggested using RHP Self-Lube® with Triple Lip Seals. This proved very successful and extended the service life from 4 months to over 1 year.

### Key Facts

- Quarry conveyor tail drum
- Highly abrasive conditions including water and grit
- Failure of the bearing resulted in seizure and conveyor downtime with consequential loss of production
- NSK solution: Self-Lube® housing with triple lip seal bearing inserts designed for high impact and heavily contaminated environments
- Increased life-time resulting in reduced downtime and improved efficiency
- Cost savings generated based on reduced maintenance costs



↑ Quarry conveyor tail drum assembly

### Value Proposals

- Failed Bearing Analysis showing root cause as ingress of water and grit
- Application assessment showed highly abrasive conditions
- Trial of RHP Triple lip seal Self-Lube® bearings showed increase in life
- Best practice re-lubrication regime applied
- Technical support provided for improved bearing performance

## Product Features

- Three high integrity nitrile seal lips with lubrication traps to stop ingress of contaminants
- High strength steel outer case resists impact to seal and provides a primary dust trap
- Available for both setscrew and eccentric locking collar insert options
- Large size range offered, including imperial options
- Inserts interchangeable with standard items
- Longer bearing life through superior seal performance
- Extended re-lubrication intervals, greatly reducing maintenance costs and increased productivity of machinery
- Simple implementation; ready replacement for existing bearing units
- Mounting on the shaft with balled setscrew, providing much greater resistance to loosening



↑ Self-Lube® with triple lip seal bearing insert

## Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Old bearings per conveyor	€174	New bearings	€63
 Bearing life: 4 months. 3 hours loss of production on failure @ €960/h (3 per year)	€8.629	Bearing life: Ongoing. Loss of production since build	€2.876
 Maintenance costs: 3 x €68/h (3 per year)	€616	Maintenance costs (original build)	€205
<b>Total Costs</b>	<b>€ 9 419</b>		<b>€ 3 144</b>