



Shell Lubricants

MINING & QUARRYING

Shell Omala HD contributed to a 2.1% reduction in electricity consumption over a seven month trial period

Total annual customer saving

US\$74,473
(AUD\$93,092)



Located in Western Australia, Norilsk Nickel's Black Swan mine is active in sourcing nickel.

An existing Shell customer, Norilsk Nickel, agreed to the implementation of a product rationalisation project on their Black Swan mine that would look to reducing the number of products servicing the facility while improving operational performance.

This included the conversion of all gearboxes on site from mineral oils to a fully synthetic product – Shell Omala HD 220. In particular, the conversion of the mine's two grinding mills to Shell Omala HD 220 led to a 2.1% decrease in electricity consumption over a seven month field trial.



NORILSK NICKEL

Company: Norilsk Nickel

Country: Australia

Application: Gear boxes – grinding mills

Saving: US\$74,473 (AUD\$93,092)

total annual customer saving

Key edge: Shell Omala HD 220

O AUS 005 JG 08

DESIGNED TO MEET CHALLENGES



1 The Challenge:

Shell identified the opportunity to improve performance on site by converting Black Swan's two grinding mills from a Shell Omala mineral oil to Shell Omala HD 220, a fully synthetic oil. Not only would the conversion to Shell Omala HD 220 help reduce the number of products being used across the plant, but it also had the potential to extend oil drain intervals, equipment life while reducing sump temperature, downtime and electricity consumption.

3 The Outcome:

From the trial, it can be concluded that the implementation of Shell Omala HD 220 on both grinding mills, resulted in Black Swan Nickel potentially reducing their electricity consumption on these units by 2.1% per annum. Shell Omala HD 220 has the potential to last twice as long as a mineral oil meaning an extension in oil drain intervals and a reduction in labour costs and downtime.

2 The Solution:

Using Shell LubeAdvisor, the Shell Technical Team was able to present a report to the customer's engineering staff outlining the potential financial and operation benefits that could be realised by converting to Shell Omala HD 220. The customer agreed to a 14 month trial – the first seven months gathering base line data and the second seven month period trialling Shell Omala HD 220 and evaluating the operational benefits.

4 The Value:

When considering the cost to change the two grinding mills over to Shell Omala HD 220, the saving in waste oil disposal costs and the saving in electricity consumption, it is estimated that Norilsk Nickel's Black Swan mine stands to potentially save US\$74,473 (AUD\$93,092) over 12 months.

The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site depending on application, operating conditions, current products being used, condition of the equipment and maintenance practices.

Shell Omala HD

Synthetic heavy-duty industrial gear oils

Shell Omala HD is an advanced synthetic heavy-duty industrial gear oil offering outstanding lubrication performance under severe operating conditions, including improved energy efficiency, long service life and high resistance to micro-pitting for optimal gear protection.

Applications

- Enclosed industrial reduction gear systems operating under severe operating conditions, such as high load, very low or elevated temperatures and wide temperature variations
- Particularly recommended for certain 'lubricated-for-life' systems
- Plain and rolling element bearings
- Oil circulation systems

Performance features and benefits

- Excellent load carrying capacity and micropitting performance providing long component life
- Excellent oxidation and thermal stability extending lubricant life
- Longer service intervals
- Superior lubricant performance improving gear efficiency
- Outstanding rust and corrosion protection of all metal surfaces
- Rapid water shedding and air release performance



Specifications and approvals

- Meets ISO 12925-1 Type CKD
- Meets ANSI/AGMA 9005-D94
- Meets US Steel 224
- Fully approved by Flender AG
- Meets David Brown S1.53.101
- Meets the requirements of DIN 51517-3

Complementary products

| Equipment | Products |
|------------------------|--|
| Draglines | Shell Malleus, Shell Omala, Shell Albida |
| Shovels and Excavators | Shell Malleus, Shell Omala, Shell Albida, Shell Tellus |
| Mills | Shell Malleus, Shell Omala |
| Crushers and Conveyors | Shell Albida, Shell Alvania, Shell Tactic, Shell Tivela, Shell Omala |
| Ore Processing | Shell Albida, Shell Alvania, Shell Tactic, Shell Omala, Shell Tivela, Shell Tellus, Shell Corena |
| Haul Trucks | Shell Rimula, Shell Hyperia, Shell Spirax, Shell Retinax, Shell Albida, Shell Donax |
| Power Plant | Shell Argina, Shell Gadinia, Shell Turbo |



Shell Lubricants

WWW.SHELL.COM/MINING