



Proof of Performance

Gear Shield NC® In The Power Generation Industry Open Gear Lubrication Of Coal Mills





Proof of Performance

Background Information

Industry: Power Generation

Equipment: Coal Mills

Application: Open Gear Lubrication

Lubricant: Petron Gear Shield NC®

Previous Condition:

- 1) Customer used a Grease Based Product on 16 mills and a Synthetic Product on 8 mills.
- 2) Lubrication cycle was every twenty minutes with system set to 100% maximum output.
- 3) Amount of lubricant applied to open gears of each mill was 3.99 oz. per hour.

Current Condition:

- 1) Gear Shield NC® currently lubricates the open gears of all 24 mills.
- 2) Lubrication cycle is every twenty minutes with system now set to 50% maximum output.
- 3) Amount of lubricant applied to open gears of each mill is now 1.99 oz. per hour

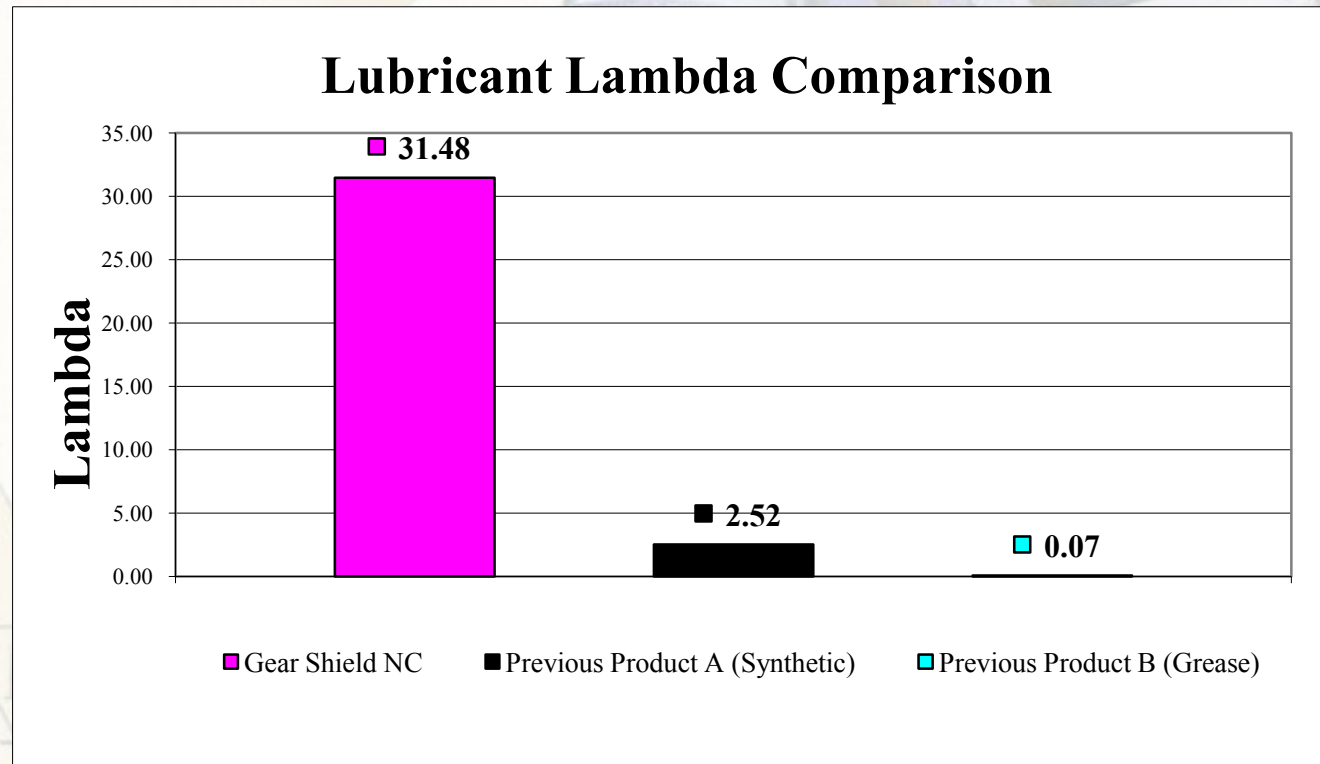
Benefits:

- 1) Higher viscosity film strength of Gear Shield NC® contributes to reduced consumption.
 - Higher lambda values (EHD)
 - Extend gear life
- 2) Consumption of lubricant reduced approximately 50%.
- 3) Overall cost for lubricant reduced at least 50%.

(EHD) Lubrication Film Thickness

Lubricant Film

- Thickness of oil between mating surfaces required to avoid metal to metal contact.
- (EHD) requires a lambda greater than (4) to achieve maximum protection.

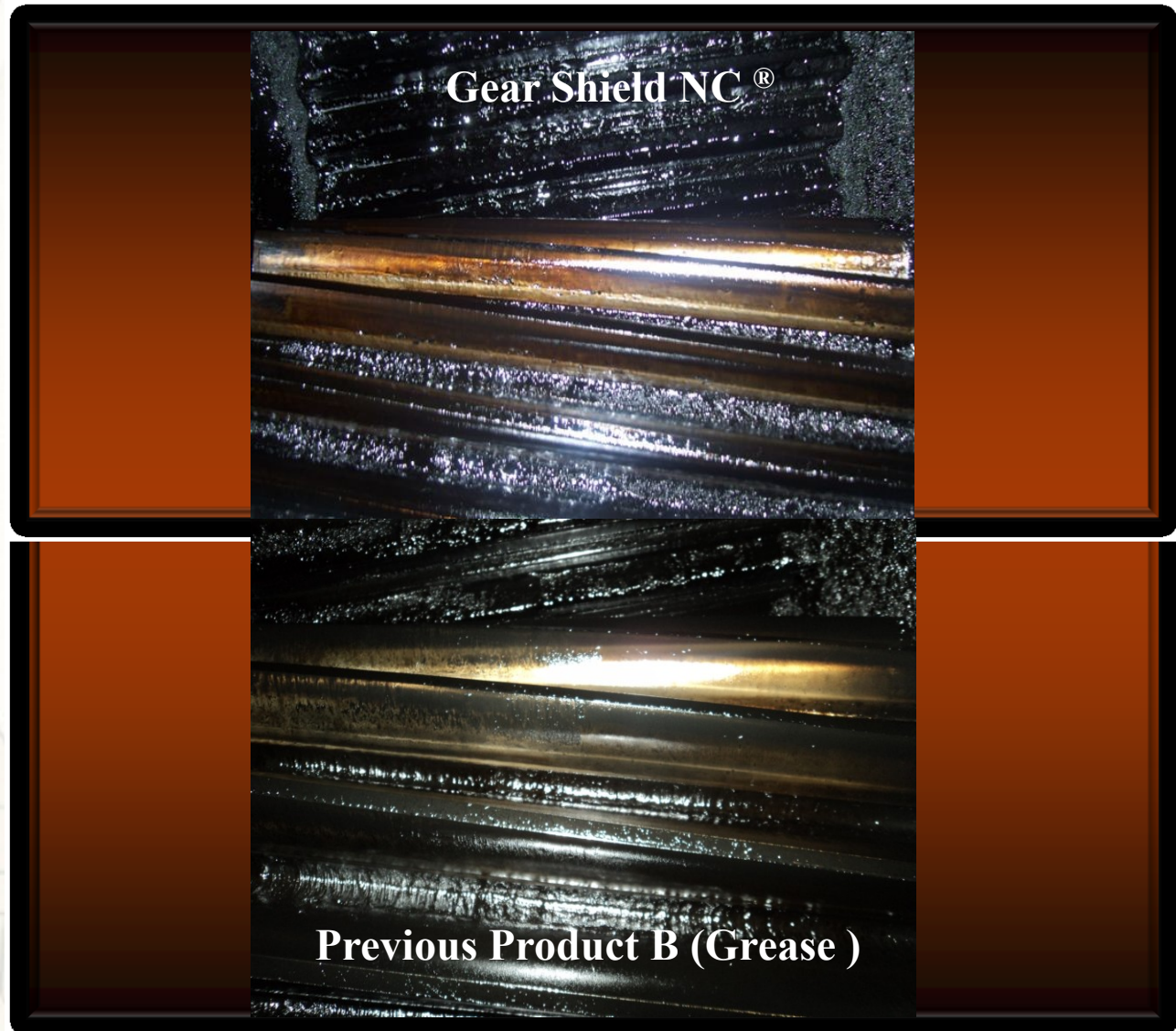


Lubricant Film Comparison

Gear Shield NC[®]

Previous Product A (Synthetic)

Lubricant Film Comparison



Lubricant Application Comparison

Rate Of Application Previous Product:

- System Blocks Are Farval DM 61 And DM 62
- DM 61 Supplies One Spray Head
- DM 62 Supplies Two Spray Heads
- System Set To 100% Maximum Output Every Twenty Minutes
- Previous Application Rate Was 3.99 oz. Per Hour

Current Rate Of Application Gear Shield®:

- System Set To 50% Maximum Output Every Twenty Minutes
- Current Application Rate Is Now 1.99 oz. Per Hour



Proof of Performance

Lubricant Consumption Calculations

(Per Mill Savings: 250 Day Estimate)

Gear Shield®

$1.99 \text{ oz./hour} \times 24 \text{ hours} = 47.76 \text{ oz./day}$

$47.76 \text{ oz.} = 2.99 \text{ lbs.}$

$2.99 \text{ lbs./day} \times 250 \text{ days} = \underline{748 \text{ lbs.}}$

Previous

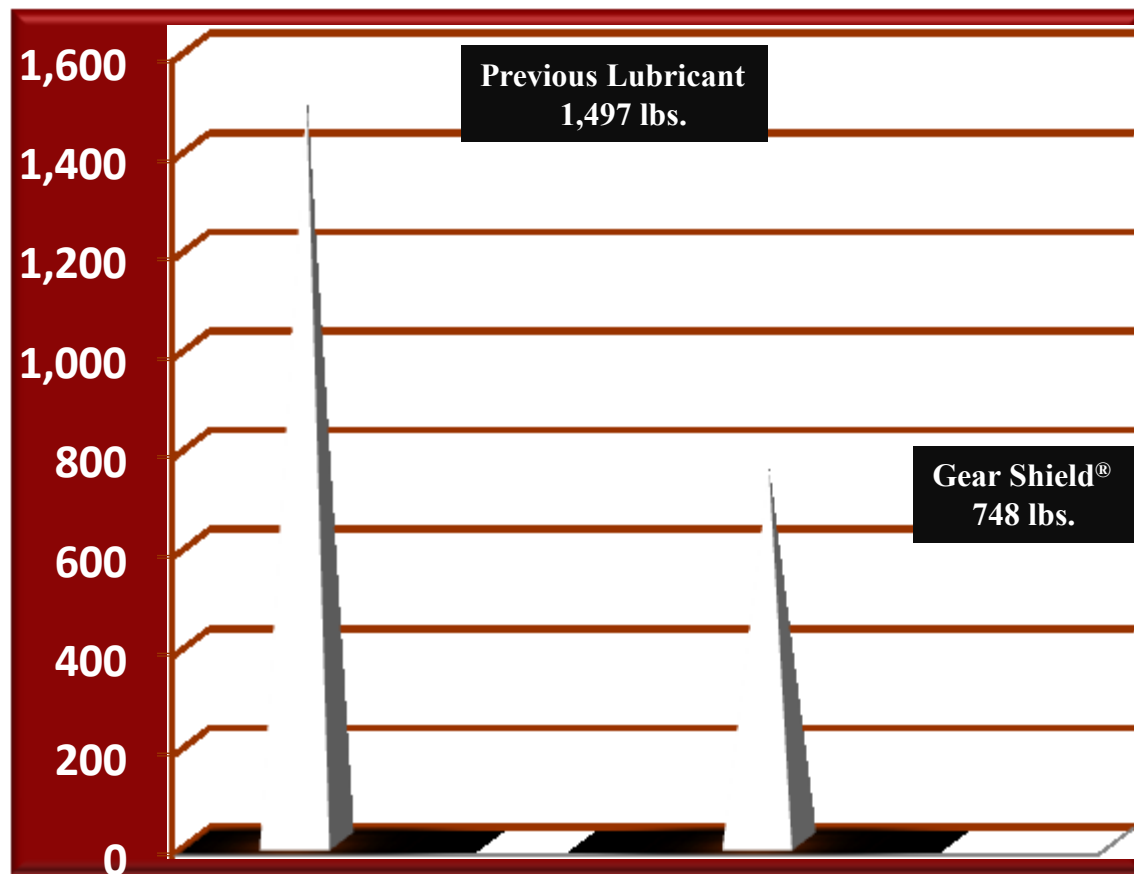
$3.99 \text{ oz./hour} \times 24 \text{ hours} = 95.76 \text{ oz./day}$

$95.76 = 5.99 \text{ lbs.}$

$5.99 \text{ lbs./day} \times 250 \text{ days} = \underline{1,497 \text{ lbs.}}$

30 min

Lubricant Consumption Comparison (Per Mill Savings: 250 Day Estimate)



Lubricant Consumption Comparison (24 Mill Total Savings: 250 Day Estimate)

