Do Dynamically Sealed Pumps Have Higher Operating Costs?

There is a common misconception in the pump industry that dynamically sealed pumps have higher operating costs due to the extra power required by the expeller. This may appear to be true if you only look at the electricity required to operate the pump but when you look at the bigger picture, it couldn't be further from the truth.

Wilfley Expellers

All Wilfley pumps are equipped with a specially designed expeller that dynamically seals the pump while it is running and provides zero operational leakage. All of this is accomplished without requiring the type of flush systems and expensive operating costs that are needed for conventional sealing systems like mechanical seals and compression packing. So, even though the expeller increases the power needed to operate the pump and slightly impact its efficiency, it provides tremendous savings because the flush-free system keeps the pumpage pure, and eliminates the for subsequent, expensive evaporative processes downstream.

Time to Crunch Some Numbers

A standard Wilfley frame 1 A9 chemical pump (with expeller) running near its best efficiency point in an application with 1.5 specific gravity would require 20 hp (15 kW) to operate. An identical A9 chemical pump (single mechanical seal, no expeller) in the identical application would require 17 hp (13 kW) to operate. The pump without the expeller would require around 1 USgpm (3.8 lpm) of flush water. As you can see in the table below, the annual operating cost of the pump with expeller is roughly **91% less** than the pump without expeller.

	A9 with Expeller	**A9 without Expeller**
Energy Cost	$13,780	$11,670
Flush Water Cost	–	$530
Water Removal Cost	–	$138,620
TOTAL	$13,780	$150,820

A standard Wilfley EMW® slurry pump (with expeller) running near its best efficiency point in an application with 1.5 specific gravity would require 311 hp (232 kW) to operate. An identical EMW® slurry pump (compression packing, no expeller) in the identical application would require 292 hp (218 kW) to operate. The pump without the expeller would require around 7 USgpm (11.4 lpm) of flush water with around 60% entering the process. As you can see in the table below, the annual operating cost of the pump with expeller is roughly **73% less** than the pump without expeller.

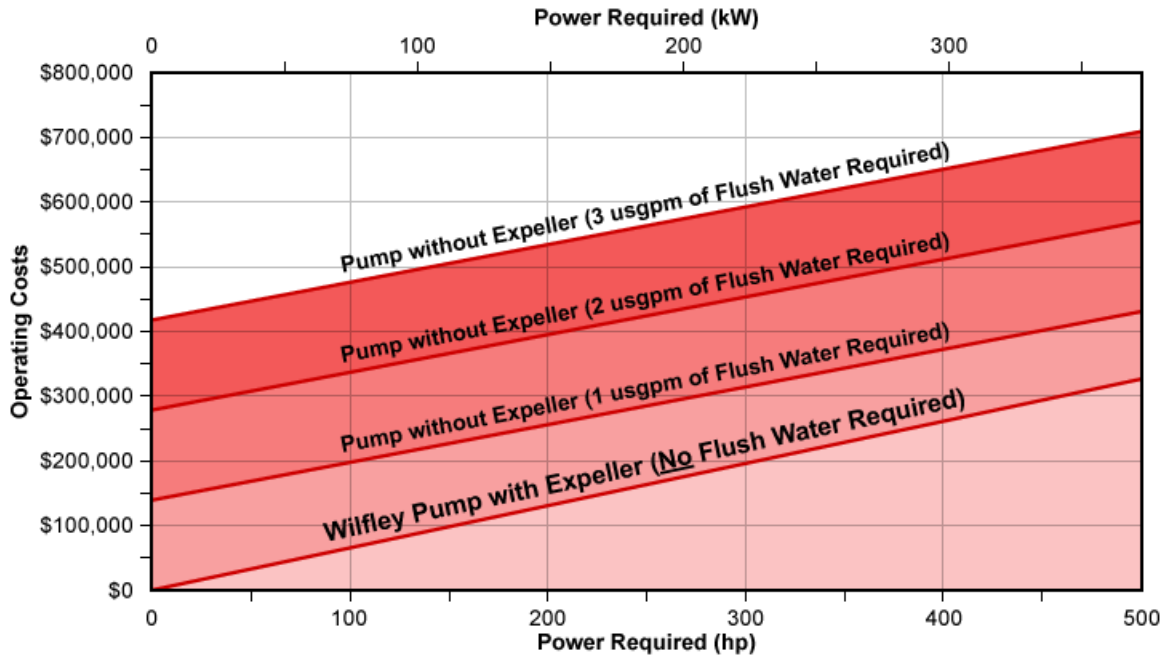
	EMW® with Expeller	**EMW® without Expeller**
Energy Cost	$213,570	$200,850
Flush Water Cost	–	$3,680
Water Removal Cost	–	$582,210
TOTAL	$213,570	$786,740

Notes on Examples:

- Examples are based on a pump running for 24 hours a day, 365 days a year.
- Energy cost based on $0.10 per kWh.
- Water cost based on $1.00 per 1,000 US gallons.
- Flush water removal cost data based on the Fluid Sealing Association Life-Cycle Cost Estimator.

Operating Costs VS. Power Required

The chart below demonstrates how much of an impact the need for flush water has on the operating costs associated with the pump.



Use the calculator below to see how much water and energy your current pumps are wasting by using conventional sealing technology.

Wilfley dynamically sealed pumps definitely don't cost more to operate, there's no question about that. Contact your local Wilfley representative today to learn more about how Wilfley can reduce your costs.