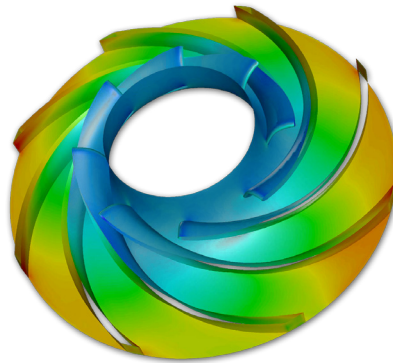


## Case Study: Neptuno Pumps®

# Improving the Efficiency of Industrial Pumps for the Mining Industry

### CHALLENGE

Neptuno Pumps® delivers engineered vertical turbine pumps for world's most important mining operations. In recent years, fluctuant commodity prices have motivated mining and engineering companies search for most efficient and reliable pumping systems. Neptuno Pumps® needed to design highly-efficient multistage vertical turbine pumps for high-head and heavy-duty applications, without the high costs of building prototypes and testing.



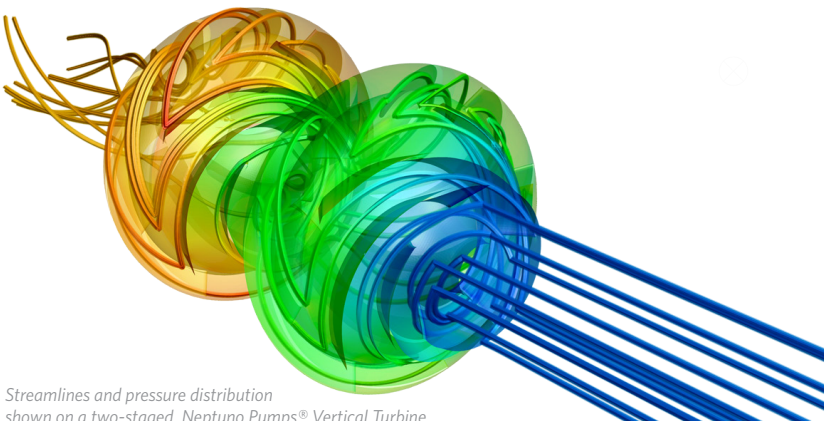
*Neptuno Pumps® impeller design validation through CFD.*

### SOLUTION

By using **ANSYS Fluent** CFD software, Neptuno Pumps® has been able to design and validate several vertical turbine pump models, optimizing impeller and bowl geometry in order to obtain the highest efficiency, which has been confirmed later by ISO 9906 certified Laboratory tests.

### BENEFITS

Simulating different designs through **ANSYS Fluent** minimizes the overall engineering time and allows a highly efficient hydraulic design without the high costs of prototypes and laboratories, providing high reliability in the lowest lead times. Thanks to CFD we have been able to increase our pump efficiencies up to 3%, optimizing designs and geometries that a standard hydraulic performance tests would not be able to identify but only through expensive and specialized tests.



*Streamlines and pressure distribution shown on a two-staged Neptuno Pumps® Vertical Turbine.*



### COMPANY DESCRIPTION

Neptuno Pumps® designs and manufactures highly-efficient vertical turbine pumps for global mining and general process industries. Its vertically integrated organization allows them to take complete control over their ISO certified designing and manufacturing processes in order to deliver world-class products to their customers.

[www.neptunopumps.com](http://www.neptunopumps.com)

### CUSTOMER TESTIMONIAL

"In order to be successful in our market we need to aggregate value to our products and services and differentiate from our competition. **ANSYS Fluent** software has allowed us to push the limits of our products in order to distinguish from our competitors offering highly-engineered products to our customers, allowing them to save time and money.

ANSYS software has allowed us to bring several new pump models to our customers in the lowest lead times without the need of manufacturing costly prototypes."

**Petar Ostojic**  
Project & Product Manager  
Neptuno Pumps®  
Iquique, Chile