

# HPS Components Used to Repair Competitor Pumps, Increased Injection Rate by 15%, Saved \$800,000 USD

## CHALLENGE

Reduce maintenance and repair costs for surface pumps in a water flood operation.

## SOLUTION

Novomet replaced only the failed components in a competitor's surface pumps, saving the operator time and money.

## RESULTS

- Saved the operator from spending over \$1 million USD to replace existing pumps with reciprocating pumps
- Retrofitted competitor systems with Novomet pumps and thrust chambers in just 2 days
- Increased overall injection flow rate by 15%
- Reduced maintenance and repair costs by \$298,200 USD in first 2 years of service

## Competitor Surface Pumps Twisting Off Shafts

An operator in the Costayaco Field in Colombia uses surface pumps to inject water in offset wells to flood the formation and push trapped hydrocarbons toward producing wells. This particular operator has adopted this reservoir flooding technique across the field. But frequent pump shaft breakage in the centrifugal pumping sections of a competitor's horizontal pumping systems (HPS) was leading to increased costs and excessive downtime.

In one particular installation, the operator had lost two surface pumps in a group of four used for injecting water. Tired of the ongoing cost of downtime and frequent equipment replacement, the operator was considering replacing the four surface pumps with three reciprocating pumps.

Novomet approached the operator with a solution that would enable them to use the equipment they already had in place and avoid the cost of purchasing and setting up new reciprocating pumps, estimated at \$350,000 USD each.

## Replace Only the Failed Components

After looking at the twisted-off pump shafts, Novomet and the operator identified two issues with the competing systems:

- The shaft itself was made of weaker material than shafts in Novomet HPS
- Unreliable check-valves in the existing pumps had enabled backpressure to damage the thrust chambers



*Novomet components used to replace only the failed components in a competitor HPS installation.*

**Costayaco Field, Colombia**

## Solution

Novomet replaced the failed pump sections with our multistage centrifugal pumps capable of handling up to 60% free gas. We also replaced the damaged thrust chambers, added a cooling system to increase runlife, and adjusted the skid, piping, control, and power systems. This solution left the competitor motor, skid, and coupling in place, replacing only the components needed to get the pumps back online. The entire operation was completed in 2 days, putting the water flood operation back on production.

## Initial Value

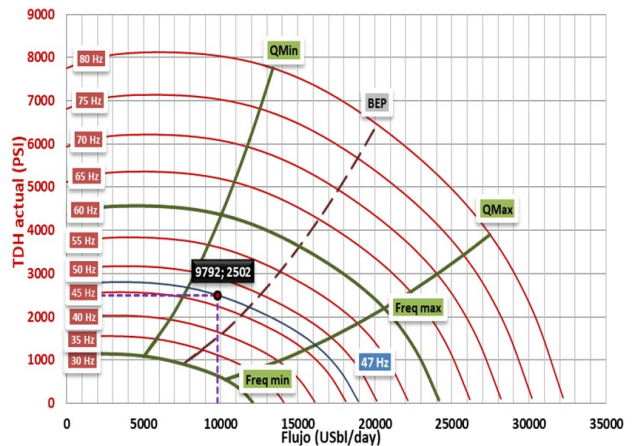
The ability to retrofit existing surface pumping systems saves operators time and money. In this instance, the operator avoided having to spend the estimated \$1,050,000 USD they had planned to spend on installing three new reciprocating pumps.

After the cost of the retrofit replacement job, Novomet saved the operator more than \$800,000 USD. The operation took only 2 days compared to the 2 weeks it would have taken to install three reciprocating pumps.

As an added benefit, using the Novomet multiphase pump sections and thrust chambers increased the total injection rate in the four-pump system by 15%.

## Long-term Value

The retrofit pumps are still in operation 3 years later. The operator plans to use Novomet components to replace competing components as they fail, helping them increase uptime and reduce operating costs in the field.



Novomet HPS components were selected because they consume 10% less power, cost 15% less, and produce 10% more discharge pressure than the failed competing pumps.

