



**Product Recovery Case  
Study:**

# **Juice Processing**

## **North America**

How a Fully Automatic Tank Select  
Pigging System Increases Yields and  
Reduces Cross-Contamination in  
Juice Processing

**HPS Product Recovery Solutions**

[www.HPS-Pigging.com](http://www.HPS-Pigging.com)



# Summary

- **HPS designed, supplied and implemented one fully automatic tank select pigging system**
- **The 4" system was for a juice processing plant located in North America**
- **The pigging project has been so successful that they have decided to implement pigging on additional juice lines.**
- **The pigging system helps the company increase yields, minimise water consumption and reduce cross-contamination.**
- **If the company have at least 6 changeovers a day, the HPS pigging system would help the company save roughly \$145,800 US dollars a day.**
- **By reducing manual intervention, the pigging system also enhances safety.**
- **Using pigging also helps towards the company's sustainability goals**

## About the Customer

The HPS client performs wheat milling and fruit and vegetable processing. The company produces a portfolio of products, including orange, pineapple, grape, lemon, grape fruit juices to retail food outlets throughout North America.

The customer also exports to more than 25 countries, including the United States, Canada, Europe and Japan.

HPS specifically worked with the citrus juice processing side of the business. However, the company also produces salads, marmalade, frozen foods, dairy and various other products.



## Project Background

The company reached out to HPS for a pigging system for a new 4" product transfer pipeline that was being installed in their plant. They approached HPS to discuss pigging to increase product yield and reduce the amount of cleaning water and fluids.

The purpose of the pipe transfer system was to transport juice from the storage tank to 3 other tanks. They wanted to use pigging as well as clean-in-place (CIP) to clean the line and recover the juice remaining in the pipeline after product transfer.

Because there were many different types of juices (orange, grapefruit, pineapple and lemon) expected to run through the line, it was important for the company to quickly, efficiently and effectively clear them to avoid cross-contamination.

The juice processor had never used pigging before, but they were aware of the benefits that installing a pigging system could bring to their business.

## Why the Juice Processor Chose HPS as their Pigging Systems Provider

HPS has a strong reputation as the world's leading hygienic and sanitary pigging systems specialists and has a proven track record of successful projects which deliver high return on investment (ROI), rapid payback, and that exceed their client's expectations.

In addition, HPS has worked with a wide variety of companies that manufacture juices, soft drinks and other beverages. These include Britvic, Wild Flavors, PepsiCo, 3V and various Coca-Cola processing and bottling plants throughout the world. So, they knew they could rely on HPS to deliver high-quality, effective and reliable product recovery (pigging) solutions.



### The Solution

After discussing the company's objectives and requirements, HPS system designers recommended and supplied a Single Tank Select 3-inch Pigging System which includes one launch area and multiple destinations.

The pigging system is fully automatic and controlled by an Allen Bradley PLC. The pig is propelled and returned through the pipeline via the plant air system. Special HPS pig-detection technology ensures accurate and reliable pig location and subsequent control by the HMI/PLC.

The equipment also includes a 4-inch HPS process pig for use in hygienic or sanitary applications (which are guaranteed for 18 miles or 30 km of use), plus full engineering drawings, electrical connection diagrams and functional design specification.

HPS provided a full service – from design and supply of a system to implementation, commissioning and ongoing support

When commissioning was complete, HPS engineers ensured employees understood how the system worked and were fully aware on how to properly and safely operate and maintain the equipment.

## The Results

The primary aims of the project were to increase yields, reduce the amount of cleaning water and reduce the risk of cross-contamination on their new 4 inch-line. The pigging system recovers up to 99.5% of product from the pipeline. If it wasn't for pigging, this product would be wasted.

So, if the company have at least 6 changeovers a day, the HPS pigging system would save the company roughly **\$145,800** US dollars a day. Therefore, in 7 days the pigging system would save the company just over \$1 million at roughly **\$1,020,600** US dollars. Therefore, the return on investment and payback of the system is significant.

Other benefits of the HPS pigging system include reduced production down time for changeovers and cleaning, increased plant capacity, reduced waste water load and reduced waste treatment and transportation costs.

Because pigging recovers practically all of the product from the line, the chances of contaminating the next product are greatly reduced. This in turn results in more consistent product output and lower rework.

Because the customer chose an automatic pigging system, this enhances safety and minimises the risks of human error by reducing manual intervention.

By saving water, resources, and energy, pigging also helps towards their environmental sustainability.

## The Future

The juice processor already has plans to incorporate pigging into additional juice lines in their plant. HPS is currently working with the company and will implement an additional tank select pigging system later in the year.

**The HPS  
System is  
Saving the  
Juice  
Processor  
Roughly  
\$145,800  
a DAY.**





# Contact HPS

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