
CASE STUDY

Biodiesel applications

**LEARN MORE ABOUT HOW OUR
EXTENSIVE FILTRATION SOLUTIONS
PORTFOLIO HELPED TO IMPROVE
THE PRODUCTION OF A RENEWABLE
DIESEL REFINERY PLANT CAPABLE OF
CONVERTING RECYCLED MATERIAL INTO
MORE THAN 275 MILLION GALLONS OF
THIS ECO-FRIENDLY FUEL.**





BACKGROUND

Our customer built an 18,000-barrel-per-day renewable diesel refinery next to their existing refinery infrastructure on the gulf coast to process animal fats, used cooking oil and inedible corn oil into renewable diesel fuel.

The plant is capable of annually converting approximately over 2 billion pounds of rendered and recycled material into more than 275 million gallons of renewable diesel, with a planned expansion by late 2021.

We worked closely with the engineering firm that was contracted to design and build the plant to design the right filtration solution for the application. Our extensive solution portfolio which gives us the ability to design total filtration solutions was one of the reasons the engineering company chose to work with us.

SELECTION CRITERIA

The specification called for robust filtration technology to remove a wide range of challenging contaminants ranging from animal remains to large debris left over from the rendering process to clean the feed for the hydrotreater.

The need was for bulk filtration all the way down to 5-micron contaminant removal. The application was challenging due to the diversity of the contaminant properties and the temperature sensitive nature of the feed which can turn into wax if cooled.

THE SOLUTION

Amafilter® and Jonell Systems were able to design a complete filtration solution which included high flow filters and pressure leaf filters. The solution comprised of:

- Series of Strainers for large particulate removal
- High flow bag filters for particulate removal (250 micron)
- Pressure leaf filters for bulk removal
- High flow polishing bag filters for finer particulate removal (10 micron)

Our series of filters worked to optimally clean the process feed in stages for the hydrotreater.

Once installed, the solution required optimization based on the actual feed conditions where the strainer pore size was adjusted, high flow cartridge solution was changed to a polishing bag solution and a pressure leaf filter stocking plan was created to support the customer.

Jonell System and Amafilter® ability to manufacture, support and service these filters help the customer keep the system working efficiently.

BENEFITS

By taking out the larger contaminants effectively and efficiency upstream of the pressure leaf filter, we were able to increase the run time of the pressure leaf filter at lower dP.

Working with the customer and optimizing the filtration based on the feed conditions allowed them to increase the process flow 1.5 times and reduced the number of change outs for filters and leaves.

We also improved the leaf design to reduce the plugging and increase the cycles per leaf from 80 to 200 as well as implemented a leaf stocking program to minimize downtime.

