PETROCHEMICAL

Uninterrupted treatment of wastewater using DAF during critical maintenance

One of the largest refineries in Spain had to take its wastewater pretreatment Dissolved Air Flotation (DAF) offline. Two mobile DAF, plug flow reactors and chemical dosing systems took over the pretreatment of the whole refinery's wastewater for three months, 24 hours a day.



CLIENT	LOCATION	SERVICE	DURATION
Oil refinery	Spain	Temporary: DAF pretreatment of wastewater	3 months

310 m³/h
PEAK PRODUCTION FLOW

<10 ppm
OIL AND GREASE IN PRODUCT

3 months
CONTINUOUS OPERATION

THE CHALLENGE

The whole refinery's oily water, with the DAF out of service

One of the largest refineries in Spain faced a critical operational challenge: it needed a reliable temporary bypass to provide pretreatment whilst planned maintenance of its own DAF was carried out. This pretreatment stage plays a vital role in the plant's operations, treating oily and greasy wastewater generated across the entire refinery.

The maintenance work required careful coordination among numerous operators and contracting companies, all working together to complete the intervention as efficiently and quickly as possible — without compromising environmental compliance or process continuity.

The challenge was further heightened by the demanding and variable characteristics of the feed water, which required a solution capable of

KEY DATA

Application
Uninterrupted wastewater pretreatment during critical maintenance

Industry
Refinery

Feed water source
Refinery run-offs and oil & grease plant leak control

Feed quality
Up to 300 ppm oil & grease, 108 NTU, 350 ppm TSS

handling:

- Feed flow rates of up to 310 m^3/h
- Oil and grease concentrations of up to 300 ppm
- Turbidity levels above 100 NTU
- Total suspended solids (TSS) around 350 ppm

These conditions demanded a robust, high-capacity solution capable of stepping in seamlessly, ensuring the refinery could maintain full operational continuity throughout the maintenance period.

PROCESS AND SOLUTION

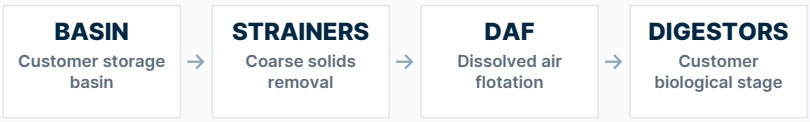
Two DAF trains, routed to run on gravity

Ecolutia was able to rapidly deploy and integrate two DAFs, plug flow reactors and chemical dosing systems required for continuous operation of up to 310 m^3/h, at a quality of less than 10 NTU, 10 ppm of oil and grease and 50 ppm TSS.

The commissioning and the engineering teams involved in the project found a suitable location and precise piping routing to minimise the extra ancillary equipment involved in using gravity to move product and waste. Also, the commissioning period was shortened thanks to good cooperation between the multiple teams involved.

During the project Ecolutia operations were regularly coordinated and communicated to the refinery engineers to ensure everybody remained involved and was aware of the work taking place.

TREATMENT FLOW PATH



OUTCOME

One month scoped, three months delivered

Originally scoped as a one-month engagement, the project was extended by an additional two months to accommodate the customer's evolving maintenance requirements — a testament to the flexibility and responsiveness built into every Ecolutia project.

Throughout the entire engagement, the system consistently treated up to 310 m^3/h, operating 24 hours a day, 7 days a week, while maintaining the quality standards agreed with the customer from day one. This unwavering reliability translated into minimal disruption and virtually no downtime to the customer's process, freeing their team to focus on other critical on-site priorities rather than worrying about operational continuity.

Central to this success was Ecolutia's remote monitoring system, which

Production flow rate
310 m^3/h

Product water quality
<10 ppm oil & grease, <50 ppm TSS, 600 ppm COD

Treatment flow path
Customer storage basin, strainers, DAF, digestors

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— combined with the deep technical expertise of the Ecolutia field service engineering team on-the-ground — enabled fast, informed responses whenever conditions changed. This proactive approach ensured that potential issues were addressed before they could escalate, resulting in smooth, uninterrupted operations throughout the three months.

The outcome: a fully successful project delivery that not only met but exceeded expectations, reinforcing the customer's confidence in Ecolutia as a dependable long-term partner.

PLANNING A SHUTDOWN?

Take your treatment offline without taking the plant with it.

info@ecolutia.com