

Hydro MicroScreen™ helped Napa Valley winery save \$740,000 a year in energy costs

Project profile

Objective

A California winery needed to cut its wastewater treatment costs while retaining the ability to irrigate vines with recycled effluent.

Solution

Hydro International supplied an MS-28 Hydro MicroScreen™ unit that outperformed the existing treatment technology to deliver \$740,000 annual savings on energy costs and \$165,000 annual savings on operational and utility costs. Additionally, recovered by-product solids could be sold on.

Situation

California's Napa Valley is famous for its winemaking, and is home to over 400 wineries.

Winemaking is a water-intensive process, however—once all direct and indirect processes are taken into consideration from growing through to harvesting, processing and bottling, it can take a full 26 gallons (100 litres) of water to produce a single glass of wine.

Both the supply, treatment and the disposal of water costs money, so winemakers are under constant pressure to reduce consumption and discharge, and to increase recycling and reuse.

Add to this the fact that California is prone to drought, and water becomes a uniquely precious commodity.

Problem

One Napa Valley winery identified a need to reduce its wastewater treatment plant operation and cut its utility costs, while exploring whether they could acquire the ability to reuse effluent for irrigation due

Product profile

Hydro MicroScreen™ rotating belt screen

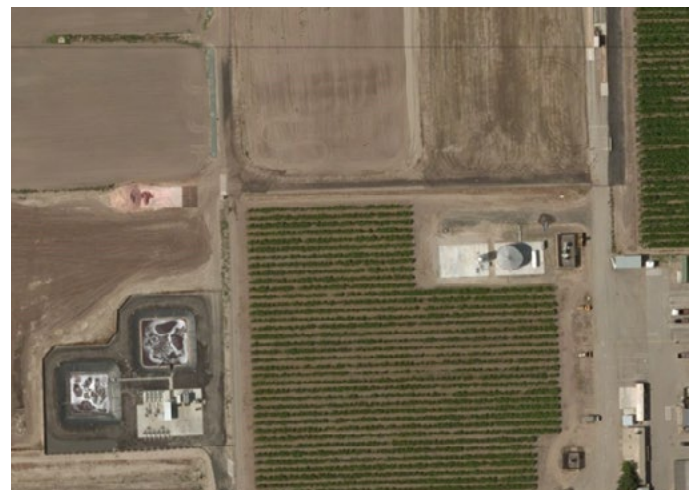
Cost-effective fine solids screening in a small footprint.

- Cut effluent surcharges
- Save money on energy
- Reduce the cost of water supply
- Recycle and reuse process water and wastewater

to high City disposal fees.

The winery had been using a conventional 500 micron drum screen to treat wastewater at flows of 50-400 gallons per minute (3-25 litres per second) ahead of an aerated two-cell lagoon that fed four field irrigation pumps.

This was identified as an inefficient system that could be made more cost effective.



The winery needed to reuse effluent to irrigate vines



A Hydro MicroScreen™ MS-28 unit was tested against existing technology in a season-long trial

Solution

The winery expressed an interest in the Hydro MicroScreen™ rotating belt screen as a possible solution.

While the Hydro MicroScreen™ outperforms conventional technologies on paper, the winery owners understandably wanted to see real-world results, so Hydro International arranged for the winery to take an MS-28 unit with 158 micron screen on a full-season trial.

In order to test the effectiveness of the two systems side by side, effluent from both Hydro MicroScreen™ system and the drum screen was piped to separate but adjacent rows in the winery.

The objective of the test was to allow treated effluent to percolate through the soil, irrigating the vines, without reaching the road at the end of the rows.

Outcome

While both systems achieved the target flow of 220

gpm (14 l/s), effluent from the drum screen stopped percolating and began to flow onto the road within two hours of operation.

By contrast, the Hydro MicroScreen™ removed far higher levels of DE and TSS, meaning that recycled effluent successfully percolated into the irrigated field for the entire season.

Switching to the Hydro MicroScreen™ meant that the two-cell lagoon and field pumps were no longer required, which translated into an 80% reduction in treatment footprint and an annual saving of \$740,000 in power costs every year.

In addition, meeting wastewater permitting needs, reducing the treatment process and improving water reuse saved the winery \$165,000 annually in operational and utility costs.

Finally, organic solids captured by the Hydro MicroScreen™ were able to be sold on to a local animal feed production facility, creating a beneficial secondary revenue stream from waste that would otherwise have been lost.



Effluent from the drum screen (above) contained heavy loads of solids, which clogged soil and prevented irrigation after just two hours



Even after an entire season the row irrigated by Hydro MicroScreen™ effluent (above) did not suffer from solids deposition

Learn more

To learn more about how the Hydro MicroScreen™ rotating belt screen can help you to improve process water treatment and boost operational efficiency visit hydro-int.com, search **Hydro MicroScreen** online or contact us:

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