

CASE STUDY

Hydroscreen®
Hamilton Ranches



Hydroscreen® unit helps nut grower recycle wastewater

Overview

Hamilton Ranches, Visalia, California, is a major walnut, almond and pecan grower. Its primary processes involve picking, hulling and drying the nuts prior to shipment.

Challenge

Substantial quantities of water are used to wash and convey the nuts during processing. In the past, fresh make-up water was used in the entire process. Water was abundant and was circulated through the system as needed then discharged into a holding pool on the ranches' property.

Unfortunately, periodic drought and increased production diminished the water supply. In order to maintain enough process water, the ranch would either need to increase its water supply or find a way to re-use its wastewater.

To increase the water supply would require a larger pump, bigger holding tank, additional piping and perhaps even a second holding pond. In their current situation, recycling was not practical because the wastewater contained twigs, hulls, dirt, broken shells and other debris that would clog the spray nozzles.

Solution

A Hydroscreen® strategically positioned in the wastewater line, removed the nuisance particles and allowed the water to be recycled without clogging the sprays.

The ranch decided that the cost of a Hydroscreen® unit would be equivalent to the cost of purchasing a new pump and tank, and much less work than installing more pipe lines. In addition, the ranch did not want to enlarge its existing pool or create a second one.

Currently, there is no legislation restricting the size of lagoon systems, but environmental standards are changing rapidly and there are no guarantees for the future.

Improved operation

The picked walnuts are brought in from the field, dumped into pits, and conveyed to a stick remover. Here, a large spray nozzle covers them with water. From there, they proceed to a water flotation area where rocks, dirt and any other wastes are removed. The next step is the huller. All the water used up to this point is now recycled.

After the hulls are removed, the nuts proceed through a “squirrel cage” and are sprayed with fresh make-up water. The water and waste drains into a sump basin. When the water level reaches a set level, a float automatically starts a pump and directs it across the Hydroscreen unit. Waste solids are captured by the screen while the water is drained into a 10,000 gallon surge tank and recirculated back through the system.

Results

The Hydroscreen®, Model HS72 x .040", with a flow capacity of 500 GPM, was the ideal solution. It is a static wedgewire screen designed to maximize solids capture in a small amount of space. It is extremely tough – not even sharp sticks and shells harm the wedgewire surface.

In addition, all the wastes caught up on the Hydroscreen are quite dry and easy to landfill. More important still, is the fact that the water contains no solid wastes – it is ideal for the closedloop recycling system.

While the exact savings in GPM is unknown, the grower notes that they now only use a quarter of the water they previously used. They're delighted with the system and extremely pleased with their choice. ■



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