



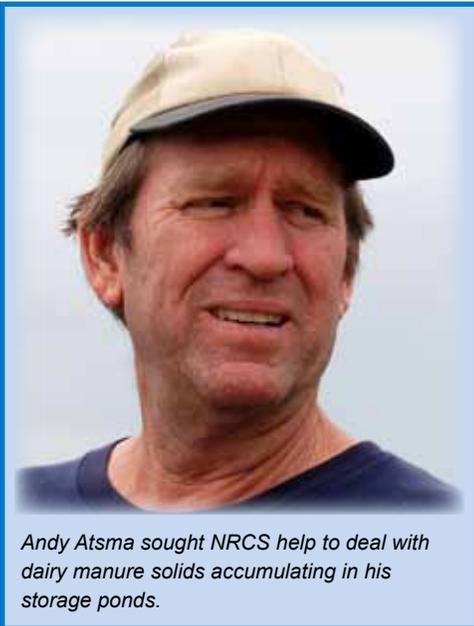
United States Department of Agriculture  
Natural Resources Conservation Service

helping people help the land

# Atsma-Cameron Dairy

*“It took some time because the design had to be just right. But in the end, construction went smoothly.”*

— Andy Atsma,  
Dairyman



Andy Atsma sought NRCS help to deal with dairy manure solids accumulating in his storage ponds.

Getting the most from his cows is something Hanford, Calif. dairyman **Andy Atsma** strives to achieve every day.

His herd of over 2,000 cattle provide him with a lot of milk. Those same cows give him quite a bit of something else too -- dairy waste.

It comes in the form of manure. It also comes in the form of flushed water, which has been used to clean his milk cows and parlor.

Atsma stores the manure in ponds. He separates the liquid and uses it to fertilize his fields. He composts the solids and sells it as fertilizer. But Atsma was challenged by the solids clogging up his ponds.

“I had to get an excavator out here every once in a while to clean them out and I got tired of that,” he says. Atsma wanted to be more efficient so he turned to the USDA’s **Natural Resources Conservation Service (NRCS)** for help.



NRCS Engineer Jon Chilcote provided quality assurance during construction of the sediment basin and processing tank he designed. The finished structure is seen below. Photos by Brian Ziegler



“He was interested in building a processing tank where he could run water from the tank over a mechanical separator to remove the solids,” said NRCS Engineer **Jon Chilcote**. “After brainstorming, he decided to add a sediment basin to reduce abrasive solids contacting the separator screen. So we incorporated both into one large structure, which he can pump out of and prevent solids from accumulating in his ponds.”

The structure Chilcote designed is 12 feet deep and has a maximum volume of 177,000 gallons. That’s roughly one-quarter the size of an olympic-size swimming pool. To help pay for it, Atsma applied for and received an **Environmental Quality Incentives Program (EQIP)** contract. Surveying the site, designing the structure and giving quality assurance during construction were all provided by NRCS.

Chilcote was faced with a number of design challenges including a construction site that was originally submerged under an existing dairy pond and constrained site conditions due to adjacent ponds. An additional challenge was designing a watertight tank shaped like half an octagon adjacent to the sediment basin. Such a shape makes the tank stronger and allows for better circulation inside it, but it made construction and preventing cracks in its concrete more difficult. Now that it’s finished, the benefits are plenty. Sand is being separated from flush water and is easily removed using the structure’s access ramp. The water is agitated and pumped over a mechanical solid separator, resulting in less pond loading. The water is also being re-used on flush lanes before bacteria levels peak. “It took some time because the design had to be just right,” said Atsma. “But in the end, construction went smoothly. I look at the separator pit every morning and it’s working fine. I’m very happy.”