

# MANAGEMENT

SUMMER 2010




Sustainable Conservation

## Pipeline Projects for Nutrient Management Plans

Merced County dairyman Mike Brasil made implementation of his nutrient management plan a reality with an EQIP funded project that more than doubled the capacity of his delivery system for nutrient water from his dairy.

The recently completed project will help him implement his nutrient management plan (NMP) as required by the Regional Water Quality Control Board. Besides keeping him in compliance with current Water Board regulations, the project will allow for a herd expansion at the six-year-old dairy.

Brasil said his 1,000-cow dairy in Stevinson, CA was the first to receive an operating permit in Merced County in several years due to stricter rules for dairies. The facility was designed and built with that in mind. His pipeline project, Brasil



*Mike Brasil, at his Stevinson, CA dairy, has utilized NRCS technical assistance and money to help meet Water Board regulations.*

adds, will keep him in compliance when he completes an expansion project bringing his herd to 2,000 milking and 400 dry cows.

Scott Turner with Natural Resources Conservation Service (NRCS) assisted Brasil with the project that will eventually deliver nutrient water to 330 acres of cropland. That goal was identified as Turner worked with Brasil to plan the project. Brasil applied for the 2007 NRCS Environmental Quality Incentives Program (EQIP) and was awarded two contracts.

Brasil said that originally, due to field locations, he could only use his nutrient water on 90 acres of ground. With Turner's help, a plan was devised to transfer nutrient water to a mixing station and then, via 8-inch PVC pipe, move the water to his other fields. The project includes flow meters and a return system that pumps any excess nutrient water back to the lagoon. The project was done in stages with expansions to 130 acres, then 250 acres. Practices in the contract included land leveling 132 acres, two tail water return systems, 400 feet of waste transfer pipeline, one flow

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# Waste Management Plan Options

Wastewater storage capacity for dairies is at a tipping point. Some dairy producers can solve their storage problems by diverting storm water from roof tops or modifying milk cooling equipment or some will have to bite the bullet and build additional storage. It's not an easy decision.

To comply with waste management plans (WMP), producers have to prove their wastewater storage is of adequate capacity by calculating the amount of liquid that flows into storage, including the amount that could result from a 25-year, 24-hour storm event. Consultants who assist with WMPs will be able to determine if a retrofit of storage capacity is necessary, says Paul Sousa of Western United Dairymen. The entire process of facility analysis and implementing infrastructure must be in place by July 1 and the retrofit deadline is December 31, 2010.

## POSSIBLE MODIFICATIONS INCLUDE:

- Reducing milk parlor water use or reusing the water for cow drinking water.
- Diverting storm water from roof gutters or other clean water away from the storages.
- Determine if NMP minimizes storage needs.

If those modifications can't be achieved, building additional storage will be in your future.

For those facing a retrofit, there are some considerations to keep in mind, says Bridget Whitney with The Source Group, Inc.

Of the 55 dairies in the Central Valley that Whitney works with on WMPs, she said four have built or are building new storages.

It's not a simple process. New rules call for synthetic or clay liners. Neither choice is cheap and clay becomes more expensive if it has to be trucked in. The high-density polyethylene liners can cost 75 cents a square foot installed, but resin prices fluctuate.

The first step is contacting an engineer, who updates the WMP with required storage capacity. They also have to certify the storage location is a minimum of five feet above ground water levels.

The design package then has to be submitted to the regional water quality board for approval. The process isn't a 'slam-dunk' said Whitney. The site is inspected and there is a lengthy review process. Proposing a single layer liner will take longer than a double liner, Whitney noted, but the double liner is more expensive.

Once the lagoon is built and the liner installed, more inspections will follow. A post-construction report is needed as well as a third party electronic test of the liner before the water board will approve use of the storage.

Eric Downs of D&E Construction in Visalia has constructed lagoons at 15 dairies in Kings and Tulare counties over the past three years. Since the WMP has been required, he's getting more calls about new storages and liners and has a few observations.

The main problems he sees are poor installation and poor sub-grade preparation. Traffic and cleaning the storage also contribute to liner failure.

"When you see gas bubbles, there is a leak and the lagoon must be drained before it can be repaired," Downs said.

Whitney said the liner installed in 2007 at Dairy Central in Hilmar has a single liner. There haven't been problems with the welds or bubbling, but there is concern with the long-term viability. Bob Borba, owner of Dairy Central, uses an agitator with rubber tires in the storage and is concerned the friction of the tires could cause wear on the liner. They discussed adding concrete ramps in the lagoon, she said, but that adds to the cost.

Storage excavation can be problematic for liners, and covering the lagoon floor with soil could be one way of protecting the liner, Downs suggested

Liners have 5 to 20 year warranties, Whitney said, but they have specific maintenance requirements. They also have to be inspected closely for tears when water levels are low. Changes in water levels, temperatures and pressure also affect durability of the liners.

Planning ahead on how the storage will be cleaned and maintained is more important in the long run than the location and size of the storage. NRCS could assist with some of the retrofit funding through the AWIP and EQIP programs. ■

# Understanding Retrofitting

## *Is a retrofit in your future?*

Producers need to determine if changes in wastewater storage are necessary to ensure compliance with their waste management plans (WMP).

According to Paul Sousa of Western United Dairymen, producers should ask their consultants if a storage retrofit is required and what it will entail. The retrofit document will be in one big stack of paperwork producers submit to the California Regional Water Quality Board. If their consultant does not point it out, Sousa said, producers may not be aware of it.

If your WMP does not call for retrofit- congratulations!

If changes are needed, here is some guidance that should help. Look at reducing flows to the lagoon if capacity is inadequate. Some suggestions are:

Reducing milk parlor water usage or reuse it for cow drinking water.

Diverting storm water from roof gutters or diverting other clean water from lagoon.

Determine if nutrient management plan minimizes storage needs.

Retrofit requirements may also include grading, berms, drainage pipe or pumps to make sure that all water that has contacted manure or feed is sent to the storage pond.

The NRCS can help with funding for some of those practices. Contact your local NRCS office for more details.

If those practices do not allow you to achieve enough reduction to allow current storage capacity, you may have to expand your lagoon or build a new one. Sousa advises producers to work with an engineer and the water board to make sure you comply with new permit requirements for lagoon construction.

The entire process of facility analysis and implementing needed infrastructure must be in place by July 1.

**The retrofit deadline is Dec. 31. ■**

# WATER DIVERSION REPORT DEADLINE JULY 1

People who divert surface water in California face a July 1 deadline to report that use for 2009. Failure to do so by the deadline could result in hefty fines. The new reporting requirement is included in the package of water bills passed by the Legislature late last year. The intent of the new law is to better identify the amount of water being used in the state's watersheds. Although there are a few reporting exceptions, Danny Merkley, California Farm Bureau Federation water resources director, said it's important for landowners to note that reporting diversions to the State Water Resources Control Board has been required for decades, but he said "in the past there were no legal consequences for failure to report. Now, there are." Farm Bureau has prepared a detailed guidance document to help members meet the new reporting requirements. It's available online at [www.cfbf.com/waterreporting](http://www.cfbf.com/waterreporting) ■



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Newsletter

Joseph Choperena

Sustainable  
Conservation,

Ph: (415) 977-0380

ext. 320

[jchoperena@suscon.org](mailto:jchoperena@suscon.org)

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meter and 100,000 square feet of concrete for manure storage.

Turner’s assistance with the project was very valuable, said Brasil.

“He knows if a 30-inch line will be big enough for what we want to do.”

Brian Bergman, agronomist at the Wreden Ranch in Hanford, CA oversaw a similar project in 2008. Bergman also wanted to increase acres of land to use nutrient water by adding pipeline. The ranch had traditionally transported nutrient water via proprietary irrigation ditch. Their original plan was to distribute the water to an additional 250 acre field with the option of extending the 18-inch pipe to additional acreage in the future. With the assistance from Prop 50 funds, State Water Board grant money administered by Sustainable Conservation (SusCon), Wreden Ranch was able to add 1,311 acres of cropland to their nutrient water distribution infrastructure. Now, this facility has a more than adequate amount of land available for agronomic nutrient water application.

SusCon funded six other pipeline projects through their Dairy Water Quality Grant Program to assist dairy producers in distributing their nutrient water to additional cropland, which will help producers implement their NMP.

Unfortunately, these grant funds are fully disbursed but other funding is available through USDA NRCS.

When a contract is awarded, Turner reviews the proposal to ensure it meets the producer’s needs and NRCS standards. He also writes the construction specifications. During construction, Turner inspects the project. When it is complete he certifies that it meets specifications. The producer is paid the amount in the contract –roughly 50 percent of the cost of materials and installation.

NRCS provides EQIP cost share funds annually. Turner said the application process for the 2011 EQIP funding is on-going and deadlines have yet to be determined, but it will likely be mid to late fall. Producers are encouraged to call their county office and schedule an appointment to have NRCS review their current system and discuss if the cost share program will fit their goals. ■



***Brian Bergman, agronomist with Wreden Ranch in Hanford, CA used Water Board funds to add over 1,300 acres of cropland to their lagoon water infrastructure.***



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98 Battery Street, Suite 302

San Francisco, CA 94111