



**BANK OR DRAIN**

## *Pollution Prevention Pays in Food Processing*

# **Broiler CEOs: You May Have a \$162 Million Opportunity**



*As a chief executive officer, you are no doubt aware that water and sewer costs for some poultry processing plants have risen almost tenfold during the last two decades. But did you know that the upward trend is projected to continue at the same rate or higher?*

**P**oultry processors in the United States slaughtered more than 7.7 billion broilers in 1997. Assuming that the average plant used 9 1/2 gallons of water to process each bird, 1997 water usage by the broiler industry totalled more than 73.2 billion gallons.

Prior to the January 1998 implementation of the Hazardous Analysis Critical Control Point System (HACCP) in 1998, some plants had cut water consumption and used less than 4 gallons per bird. Perhaps now with HACCP, plants could realistically reduce their water use from 9 1/2 to 6 gallons per bird. If all broiler plants reduced water usage to that level, the industry would save about 27 billion gallons annually, enough for a city of almost 400,000 people.

The wastewater from broiler plants contains many potential pollutants. In terms of biochemical oxygen demand (BOD<sub>5</sub>), the waste load of many plants is 65 pounds or more

per thousand broilers. If the average plant discharges that much BOD<sub>5</sub>, the annual load from the broiler processing industry totals more than 500 million pounds—about as much as is produced by a city of 9 million people.

Some plants discharge as little as 30 pounds of BOD<sub>5</sub> per thousand broilers. If plants reduced their discharge to that level, over 271 million pounds of BOD<sub>5</sub> per year could be eliminated.

### **Opportunities to Save Money**

Poultry processors are finding that water and sewer charges have increased more rapidly than most other expenses. Some poultry plants have seen water and sewer costs increase by a factor of five or ten during the past 25 years. HACCP has contributed further to this increase. Of plants surveyed, water use has risen 30 to 50 percent since January

1998. If the entire poultry industry could successfully conserve water and reduce waste load, almost \$162 million could be saved annually.

At typical water prices, cutting water use from 9 1/2 gallons to 6 gallons per bird would save about \$14.00 per thousand broilers processed. Reducing the waste load from 65 pounds of BOD<sub>5</sub> to 30 pounds would save another \$7.00 per thousand broilers. Considering the 7.7 billion birds processed each year, here's how those savings add up for the industry as a whole:

<b>Annual water cost savings at \$14.00 per thousand broilers</b>	<b>\$107,800,000</b>
<b>Annual surcharge savings at \$7.00 per thousand broilers</b>	<b>\$53,900,000</b>
<b>Total annual savings</b>	<b>\$161,700,000</b>

\*Based on water charges of \$1.50 per thousand gallons, sewer charges of \$2.50 per thousand gallons, and a BOD<sub>5</sub> surcharge of 20 cents per pound.

## Why Is Reducing Water Use and Waste Load Especially Important Now?

Regional water shortages, new pollution regulations, and new policies on water pricing make water conservation more important now than ever before.

As the U.S. Environmental Protection Agency (EPA) tightens restrictions on the quality of water consumed and wastewater released into the environment, water costs will probably rise even more rapidly than in the past.

Water conservation and waste reduction are becoming much more important because:

- Water costs and sewer charges are on the rise;
- Water quality and availability are threatened by increased consumption and pollution due to population growth in many areas of the country;
- Pollution is being aggressively attacked by public agencies and the public at large;
- Future regulations will require water conservation and elimination of pollutant discharges;
- A corporation's image can be tarnished and its sales hurt if its plants are perceived as harming the environment.
- Enforcement actions, lawsuits, fines, and even prison terms, are becoming more severe.
- Many states have introduced stricter environmental regulations, which make expansion or the incorporation of new industries into an area more difficult.

## Questions for Your Management Team

Here are some things for your management team to consider as you think about your company's water use and waste discharges:

- Has your poultry operation experienced a rapid rise in water and sewer charges?
- How much could you save by reducing water use from its present level to 6 gallons per broiler? How much could be saved by cutting BOD<sub>5</sub> discharges to 30 pounds per thousand broilers?
- Do you supply your own water at some plants? How much does this water cost? Is the supply dependable? How is the quality? How will these factors affect future expansion?
- If you treat your plants' wastewater or pretreat it, have you computed what this treatment costs, including proper sludge disposal?

## What Can You Do?

If you're the chief executive officer of a firm with 10 percent of the U.S. broiler production, you may have a \$16 million opportunity. Reducing water use and waste load now could save you that much money next year. If water and sewer costs increase tenfold over the next decade, you may be able to save \$162 million annually. Here are some suggestions to help you conserve:

- Ensure that plant managers measure water use daily or at each shift change.
- Emphasize to personnel at all levels that conserving water and reducing waste load are sound business practices.
- Appoint someone in each plant to be responsible for water conservation and waste reduction practices and for monitoring their effectiveness.
- Provide a training program for your managers and employees.
- Show by your interest and example that you take water conservation and waste reduction seriously. Helping your personnel develop the proper attitude is 90 percent of the battle. It starts at the top.

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*For further information, contact your county agent, and check the Food Science web site at [www.ces.ncsu.edu/depts/foodsci/ext/pubs](http://www.ces.ncsu.edu/depts/foodsci/ext/pubs). You also may want to read the following Extension publications: Liquid Assets for Your Poultry Plant (CD-20); Poultry Processors: You Can Reduce Waste Load and Cut Sewer Charges (CD-22); and Survey Shows that Poultry Processors Can Save Money by Conserving Water (CD-23).*

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