Kraft Foods

CASE SUMMARY 13

KRAFT FOODS

Mason City, Iowa
Cerro Gordo County

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The Company

Kraft Foods Inc. is the largest branded food and beverage company headquartered in the United States and the second largest worldwide. Kraft Foods markets many of the world's leading food brands, including *Kraft* cheese, *Jacobs* and *Maxwell House* coffees, *Nabisco* cookies and crackers, *Philadelphia* cream cheese, *Oscar Mayer* meats, *Post* cereals and *Milka* chocolates, in more than 150 countries.

Project Background

Kraft's vision is to be a world-class environmental organization and strategic environmental leader. As part of this initiative, Kraft Environmental Management System (KEMS) was implemented. KEMS involves continuous reviews and updating, which allows monitoring of goals and compliance obligations. The Mason City facility continually strives to meet and exceed the expectations set forth by the company and city.

Incentives to Change

When federal radium regulations changed, the City of Mason City was required to update its water treatment facility and imposed a 40 percent rate increase on industrial customers to recover a portion of the costs. Also, the Kraft-Mason City facility has experienced a 10 percent increase in water usage over the past year with no known root cause. By reducing both the incoming water to the plant and the volume of wastewater discharged, utility costs can be reduced, perhaps dramatically.

Results

A water material balance was compiled to identify all of the plant's areas and volume of water usage. This data helped identify areas of opportunity and also to understand the flow of water within the plant.

Five water savings projects were aggressively investigated: scrap product, triple rinse for barrels, equipment clean in place (CIP), boiler blow down and cooling tower treatment.

1. Scrap product

Scrap product is currently passed through a turbo separator that separates the actual scrap product from its packaging using pressurized water and paddles run by a motor. The scrap

product is then land applied by a local farmer and the packaging is landfilled. The separation process minimizes the amount of material going to the landfill. Many alternatives to the current procedures were evaluated. Some of those investigated included: using the waste product for animal feed, using product for compost, sending the remaining cups to a plastic recycler, and burning the remaining packaging in cement kilns. Additional study is needed to fully evaluate the options generated.

2. Triple Rinse for Barrels
Barrels that contain flavoring and non-hazardous chemicals must be triple rinsed and have labels removed before they can be recycled. The existing method was to place a hose in the top of the barrel and run the water for a period of time, sometimes hours. The new method involves a simple piece of equipment, which was manufactured by a contractor on-site. The barrel is placed over the equipment and sprayed three times with short pauses between for draining. This will conserve 120,000 gallons of water annually.

3. Equipment Clean in Place (CIP)
The CIP process is extremely automated and efficient. One area, however, does not recycle the final rinse for the next pre-rinse. By changing this, water can be conserved and disposal costs can be avoided. Instead of paying for city water for the pre-rinse and final rinse, and in addition paying to dispose of both sets of rinse water, city water used for the final rinse is recovered and used for the next pre-rinse. Testing needs to be completed to evaluate the feasibility of this recommendation.

4. Boiler Blow Down
The boiler discharges steam and water to remove sediment from the system. Currently, the discharge piping is not heat rated; a cold water line also runs during blow down to avoid damage. Piping the system to capture this blow down and sending it to the hot water heat exchanger would conserve water and save energy by utilizing the energy in the hot water. Concerns regarding the quality of the blow down water need to be addressed.

5. Cooling Tower Treatment
The cooling tower water is currently treated with chemicals to control scaling, corrosion and biofouling. The chemical treatment is not producing ideal results and the condition of the towers is deteriorating well before it should. Mechanically treating the water would eliminate all chemicals, conserve water and optimize tower performance.

Project Summary Table

Opportunity	Capital Cost	Annual Savings	Environmental Benefit- Annual	Status
Turbo separator	Varies by alternative	More study needed	500,000 gal water 400,000 lbs landfill 12.5 million lbs land app 35,000 kWh	Further investigation
Triple rinse	$425	$500	120,000 gal water	Implemented
CIP	Programming	$14,000	3.4 million gal water	Further investigation
Boiler blow down	$5,300	$8,000	1.1 million gal water 460 million Btu	Further investigation
Cooling tower	$0	$10,300	5.2 million gal water 110,000 lbs chemical	Recommended