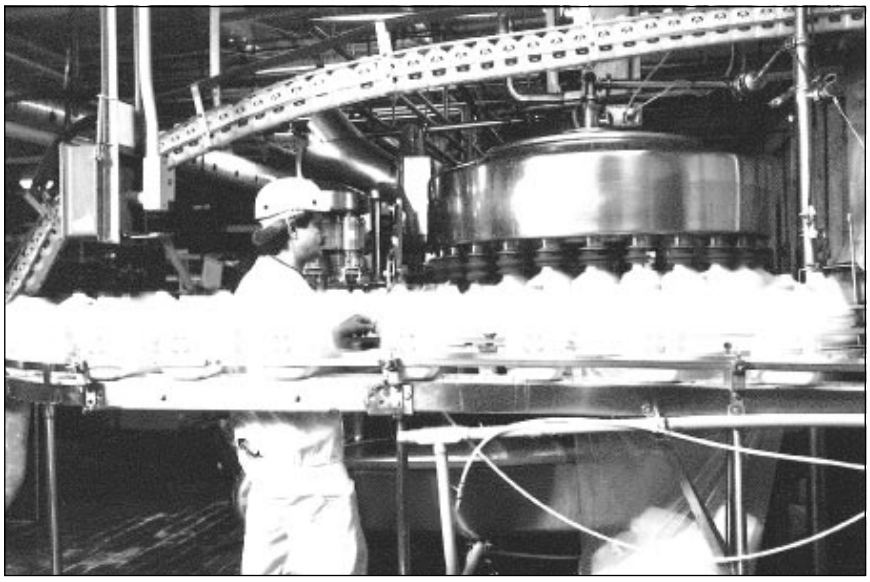
Ontario

The Becker Milk Company

Scarborough, Ontario

"We at Becker felt that, as a leader in environmentally friendly products and clean plant operating procedures, we had done all we could. This analysis has proven to us that there is always more to be done to cut down on our use of resources and use them more efficiently and help our bottom line."

Dr. Geoffrey Pottow
President, The Becker Milk Company



The fluid milk packaging line

THE COMPANY

The Becker Milk Company produces a range of products at its Scarborough plant, including fluid milk, cream, ice cream, fruit juices and drinks, and frozen novelty products. It is representative of many operations in the Ontario dairy sector. The company has an excellent record as a business leader in using returnable milk jugs in Ontario and in diverting solid waste from landfill through reduction and recycling. Becker's dairy was one of the first industrial plants to recognize the potential benefits of a green industrial analysis.

THE CHALLENGE

In 1994, the Ministry of Environment and Energy, and Becker retained the services of Wardrop Engineering Inc. to conduct a green industrial analysis in the Becker's milk processing plant in Scarborough. The analysis was intended to help Becker Milk Company set priorities and make plans for implementing capital and operational projects related to "green" opportunities. The task was to identify, analyze and recommend appropriate opportunities for the reduction of energy and water use, effluent and solid waste generated. It was also intended to find ways for the Becker plant to make its processes more efficient to conserve resources and protect the environment.

OPPORTUNITIES

Although Becker had been actively pursuing green opportunities in the plant, the company realized that it could make further savings. The analysis focused on the following process areas considered to be of high priority by the plant management:

- Reduction of water and energy use and solid waste generation;
- Recovery of milk solids from dilute rinse streams;
- Ventilation improvements and bacterial control to improve product shelf life in the product storage area;
- Recovery and recycling of phosphorus-containing cleaning solution.

RECOMMENDATIONS

Major recommendations, along with the payback period are listed below:

- Install a membrane filtration system for recovering milk solids from dilute rinses (payback 3.2 years).
- Improve ventilation in the raw milk area and use ultraviolet (UV) disinfection in the milk production area to increase product shelf life. (payback 6 months)
- Recover and recycle phosphorus-containing supersheen solution for cleaning-in-place. (payback 10 months)
- Recover steam condensate from milk pasteurizer, and heated cooling water from cream sterilization system. (payback 8 months)
- Recover and use elsewhere off-spec products. (immediate payback, requires no capital expenditure)

The Becker Milk Company has already started implementing a number of these recommendations.

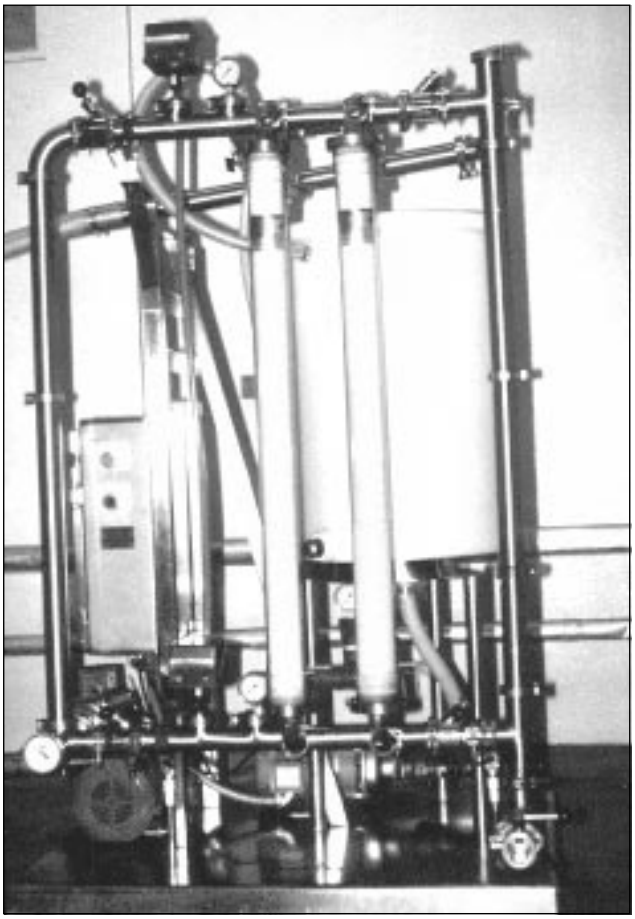
Some of the technologies identified for business development opportunities in the dairy sector were membrane separation, optical turbidity metering, UV disinfection to purify ventilation air, and on-line real time effluent monitoring linkage with process.

POTENTIAL SAVINGS

The estimated net potential annual savings resulting from an implementation of their recommendations by the Becker plant:

✲ Materials Input	$ 194,100
✲ Effluent surcharge (including BOD)	112,400
✲ Chemicals	33,600
✲ Energy	25,100
✲ Water	20,300
✲ Others (including product waste and processing)	57,900
Total Estimate	**$ 443,400**

These savings would require an initial capital expenditure of about $1,071,000, $1.0 million of which is estimated to be the capital cost of the membrane separation technology.



Membrane filtration system for recovering milk solids.

PARTNERSHIP IN POLLUTION PREVENTION AND RESOURCE CONSERVATION

Industrial companies located in Ontario may seek ministry / industry services that will help them to:

– use energy and water more efficiently

– reduce, reuse and recycle solid waste, and

– reduce or eliminate liquid effluent and gaseous emissions.

Equipment and services supply companies can benefit from the information provided on technologies identified for business development.

FOR FURTHER INFORMATION, PLEASE CONTACT:

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MINISTRY OF ENVIRONMENT AND ENERGY SERVICES

For information on Ministry of Environment and Energy assistance to industry, please contact the Industry Conservation Branch at (416) 327-1492, Fax (416) 327-1261.

For more project profiles and other publications, visit the ministry's website at http://www.ene.gov.on.ca

This project profile was prepared and published as a public service by the Ontario Ministry of Environment and Energy. Its purpose is to transfer information to Ontario companies about findings and recommendations of a resource conservation and environmental analysis conducted by a consulting engineering firm at an industrial plant in Ontario.

Pour tout renseignement en français au sujet du programme d'écologisation industrielle du Ministère de l'Environnement et de l'Énergie, veuillez composer le 416-327-1443, télécopieur 416-327-1261.

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