

# Cereal and Syrup Processor Improves Wastewater Monitoring and Billing Accuracy

## RESULTS

- Improved wastewater monitoring accuracy to meet reporting requirements
- Reduced reporting costs
- Reduced risk of environmental liability for permitting requirements



## APPLICATION

Waste water monitoring

## APPLICATION CHARACTERISTICS

5-7% thickened sludge, consistency of pudding

## CUSTOMER

Cereal and Syrup Processor, USA

## CHALLENGE

This Cereal and Syrup Processing company is charged for wastewater effluent treatment based on volume and peak load limits. Effluent flows by gravity to the city wastewater treatment plant. Flow rate was measured based on the level of effluent in the pipe. Accurate measurement is critical as small level errors could result in large total volume errors. Wastewater flow monitoring suffered from low accuracy and reliability. In addition, the data reporting was labor intensive.

The flow rate is determined by measuring the level upstream of a flume. Flow was measured by an outdated and problematic ultrasonic level transmitter. The level transmitter logged the flow to a circular chart recorder. Total and peak flow data was manually read from the chart recorder and reported monthly.

The cost of generating wastewater flow reports for the city was high due to manual reporting methods. In addition, inaccurate sensing and recording of effluent flow resulted in inaccurate billing.

*The combination of a Rosemount 3102 Ultrasonic Level Transmitter and 3493 Universal Controller provide accurate flow measurement and automatic record keeping, reducing reporting costs and risk of liability.*



Figure 1. Rosemount 3102 Ultrasonic Level Transmitter

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## SOLUTION

A new Rosemount 3102 Ultrasonic Level Transmitter was mounted just upstream of a flume in the effluent flow channel. The 3102 provides accuracy of  $\pm 0.1$  in. resulting in a much more accurate flow measurement. Then, the level output is sent to a new Rosemount 3493 Universal Control Unit, which converts the effluent level to dynamic flow. Plus, the Rosemount 3493 catalogs the daily totalized flow, daily maximum flow with time of day, and monthly totalized flow in a spreadsheet format utilizing Rosemount Logview software supplied with the 3493. This information is submitted to the city monthly.

The customer is able to reduce labor and other reporting costs by automatically monitoring effluent flow and reporting monthly totals to the city. Wastewater monitoring accuracy is improved. Finally their potential environmental liability is reduced due to improved accuracy and reliability of reporting.



Figure 2. Rosemount 3493 Universal Controller

## RESOURCES

### Emerson Process Management Water & Wastewater Industry

<http://www.emersonprocess.com/solutions/water/index.asp>

### Rosemount 3100 Series - Ultrasonic Level Transmitter

<http://www2.emersonprocess.com/en-US/brands/rosemount/Level/Ultrasonic-Transmitters/3100-Series-Ultrasonic/Pages/index.aspx>

### Rosemount 3490 Universal Control and Display Unit

<http://www2.emersonprocess.com/en-US/brands/rosemount/Level/Ultrasonic-Transmitters/3490-Universal-Control-Unit/Pages/index.aspx>

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#### Emerson Process Management

Rosemount Division  
8200 Market Boulevard  
Chanhassen, MN 55317 USA  
T (U.S.) 1-800-999-9307  
T (International) (952) 906-8888  
F (952) 949-7001

[www.rosemount.com](http://www.rosemount.com)

#### Emerson Process Management Flow

Neonstraat 1  
6718 WX Ede  
The Netherlands  
Tel +31 (0) 318 495 555  
Fax +31 (0) 318 495 556

#### Emerson FZE

P.O. Box 17033  
Jebel Ali Free Zone  
Dubai UAE  
Tel +971 4 811 8100  
Fax +971 4 886 5465

#### Emerson Process Management

Emerson Process Management Asia Pacific  
Private Limited  
1 Pandan Crescent  
Singapore 128461  
T (65) 6777 8211  
F (65) 6777 0947  
[Enquiries@AP.EmersonProcess.com](mailto:Enquiries@AP.EmersonProcess.com)

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For more information:  
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