

Micronics Ultrasonic Non Contact open channel flow measurement provides cost-effective solution and contributes to reducing milk wastage and costs for Dairy Processing Site.

Bradshaw Consulting specialises in Energy and Process loss reduction in the Food and Drink sector. Their client Dairy Crest operate a large Dairy Processing site near Stroud in Gloucestershire and with the help of the Dairy Crest Improvement team (Chemical Engineers) Bradshaw have developed and installed a unique Effluent Monitoring and Analysis system incorporating the Micronics SLT32 - Ultrasonic Non Contact open channel flow measurement system.

The purchase of the new turnkey system and meters was driven by a need to provide online product wastage information from the various departments and hence, further reduce milk wastage from the site.

Having considered various measurement alternatives Ultrasonic Non Contact meters were selected due to the ease of installation and maintenance/service benefits associated with the non-contact technology.

Micronics were selected as the supplier due to a combination of their experience with open channel flow measurement technology and their competitive pricing in comparison to alternative similar

technology solutions or alternatives requiring considerable civil construction work.

Three Micronics SLT32 meters were purchased as a package. The meters have the capability to measure and log effluent flow and totalised flow; however, in this application they are providing flow data via a 4 to 20mA signal to the system's separate control system.

The meters have been installed at three known process discharge points to assess effluent discharge rates assuming flume characteristics. The Bradshaw system also analyses the effluent milk content to identify the milk wastage using a volume x turbidity (~ COD mg/l) calculation, which is further, analysed in terms of real time and day total data within the site SCADA system.

Site staff are able to monitor live effluent discharge rates, initiate action to investigate potential reductions in process milk wastage and view the results in real time or daily values. And in doing so they are able to identify and drive down milk wastage and effluent costs using M&T techniques in line with Best Practice.

Bradshaw's Will Todd has managed the project and he believes the project has developed an industry-leading tool for the management of process waste and effluent within the Dairy Processing industry. The Micronics products have performed well, service has been good and the installation has been an environmental and financial success. Improved measurement and visibility has enabled Dairy Crest to improve the plant's performance and as a consequence less product is being wasted and therefore less effluent is being discharged!

The potential for system expansion on-site is circa 50% and there is significant potential for replication on other sites across the Dairy Processing industry.

Further information contact Micronics (www.micronicsltd.co.uk) on +44 (0)1628 642058



SLT32 Level and Flow Monitor

- Monitor flows through open channels.
- Eliminates the need for flumes or weirs.
- Automatic temperature compensation.
- Barriers for I S operation.
- Optional 50,000 point data logger.
- Logger software included. Runs on Windows 95, 98, 2000, XP or NT.

Enclosure:- Watertight and dustproof (IP66).
Power Input:- 100-130VAC and 200-250VAC, 50/60HZ., 7.5 watts 12VDC or 24VDC.
Outputs:- 2x Isolated 4-20mA into 1000 Ohm load.RS 232 Option Serial and Windows Software.

Relays:- 3 x form 'C' dry contacts rated 5 Amp SBDT Programmable for Flow Proportional pulse (sampler/totalizer) flow and/or level alarm.
Level Range:- with standard PZ32T sensor: 10m (other options available)
Accuracy:- 0.25% of Range.
Linearity and Repeatability:- +/- 0.1%.

