

# FINDING SEVEN MILLION POUNDS OF LOST MILK... AND \$600K IN SAVINGS

MORE EFFICIENT OPERATION THROUGH DATA SCIENCE

## Reducing Material Loss Through More Precise Production Management

### Key Results:

- Isolate and correct operational inefficiencies
- No-hassle installation
- Segment the plant into key areas; map plant goals to performance metrics
- PMO validation
- FDA certification
- Utility benchmarking
- Reduced shrink from 2.5% to 1.0%

### Challenge: Recover Seven Million Pounds of Lost Milk

A milk processing plant processes approximately 750,000 pounds of fluid milk per day (5.5M lbs weekly), and it receives milk seven days a week. The processing and bottling areas of the plant operate three shifts per day, six days per week. Daily cleaning of tankers, tanks, lines and other processing equipment occurs by using four different systems.

The plant was experiencing overall milk loss or shrink of 2.5% (in terms of total raw materials and finished product loss). This represented approximately 7 million pounds per year of lost milk, with an annualized value in excess of \$1 million. In addition, the plant often exceeded permitted levels for fats, oils and greases in wastewater discharged to the city, primarily as a result of butterfat, resulting in surcharges costing the plant in excess of \$80,000 annually.

### Solution: Production Management Software

Vigilistics' production management software solution provides a data collection engine with real-time reporting and analytics for all key areas of the plant, including receiving, batching, pasteurizing, filling, distribution, and waste water — giving operators the ability to isolate and identify the sources of inefficiency in each key area of plant operations. This immediately allowed the plant to assess their normative levels of efficiency and establish new goals, and helped them achieve over \$680,000 in annual savings.

## Results

### Vigilistics reduces:

- Electricity cost
- Water consumption
- Chemical consumption
- Downtime for cleaning
- Maintenance time
- Wash validation time
- Compliance risk
- Operator idle time
- Verification & review time
- Manual report generation
- Retraining time

### Vigilistics increases:

- Availability for production
- Employee productivity
- Production equipment life
- Quality and consistency
- Process optimization
- Paperless compliance
- Employee training and certification
- Audit support
- Visibility for workforce management
- Visibility of issues and corrective actions

**Data Collection.** Data is sampled real-time from the plant floor at any desired interval, providing real-time access to information.

**Key Performance Metrics.** The plant was segmented into key performance areas, then performance metrics were established using the data collection engine for each key step. The top-down performance goal for the plant is now visible in terms of a bottoms-up assessment of key performance metrics.

**Reduced Shrink.** Measureable and sustainable reductions in shrink were achieving, dropping from 2.5% to less than 1%. This translates to an annualized savings of \$600,000 in the first year.

**Surcharges Avoided.** Municipal surcharges were eliminated, saving the company an additional \$80,000 in the first year. This also allowed the facility to consider increased capacity using the existing plant without escalating municipal surcharges going forward.

**Real-Time Variance Reporting and Collaboration.** Real-time variance reporting that highlight variations from key performance metrics are available. Operators are alerted to issues before they expand to become major problems. The leadership team collaborates to review information by shift, by day, by week and by month, and prioritize a list of actions based on information in the variance reports.

**Process Improvements.** Milk receiving and cream load out procedures are adjusted and operators are retrained as needed to understand procedures. Production planning adjustments were made to avoid unnecessary product changeovers, and minimize recycle time on the pasteurizer; the time to change from product to water and water to product was reduced to an acceptable level. Filler loss and overfills were reduced and production of unsaleable product reduced. When notified of a high fat level in the waste water stream, events happening at the same time were observed for their affect on the problem and managed.