



REDUCING WATER USAGE SAVES A DAIRY PROCESSOR OVER \$1 MILLION PER YEAR

MORE EFFICIENT OPERATION THROUGH DATA SCIENCE

Reducing Water Usage in Sanitization for Improved Quality, Productivity and Profits

Key Results:

- Real-time monitoring of automated and manual cleaning processes
- No-hassle installation
- Transition to paperless compliance in < 2 weeks
- PMO validation
- FDA certification
- Utility benchmarking
- Water and steam reduction: 3% cost savings

Challenge

A dairy plant that processes 4.5 million gallons of fluid milk and 500,000 pounds of powdered milk daily set a goal to reduce the amount of water and steam used in its facilities. Dairy processors typically use two gallons of water for every gallon of consumer product produced. Much of that water is used in Clean-in-Place systems and manual cleaning processes. To reduce water usage and increase productivity, managers needed greater insight. But like most plants of its kind, this facility had no internal metering. The only way to examine the plant's water and energy consumption was to review utilities billing records several weeks after the end of each month — too late for management to isolate and solve inefficiency problems.

Solution: Sanitization Management Software

Vigilistics helped reduce water and steam usage by over 10%, saving more than \$1,250,000 per year. And by reducing time spent cleaning, the facility freed about 100 minutes of time per day for additional production. How? Vigilistics' software collects data at every step in CIP, COP, manual workflows, and ATP tests — and delivers real-time, web-based reports, analysis and alerts to operators and managers, helping them operate more efficiently.



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

Water Reduction Study. At the customer's request, Vigilistics also provided results coaching on water use, and quickly determined that multiple circuits were using larger amounts of water than needed. After these recommendations were implemented, over 10,000 gallons of water and waste water a day were reduced, resulting in a savings of \$89,000 each year.

Steam Study. Vigilistics provided results coaching using the data produced by VMI-CIP to quickly isolate the circuits that were over-using steam, and within minutes the root cause was identified as the temperature of caustic wash. Once isolated, the problem was quickly corrected resulting in reduced carbon footprint and immediate savings of \$36,000 per year.

Utility Benchmarking. The utility (electricity, steam, water, chemical and wastewater discharge) use for the CIP Systems in the plant was established over a customer defined period. Use was correlated to product output, goals were set, and tactics for improvement are being employed.

No-Hassle Installation. Vigilistics software was installed without interrupting normal plant operations or systems, and is 100% compatible with existing automation and control systems at the most sophisticated plant in the enterprise.

Best Practice Digital Records that Scale. The data collection engine at the heart of Vigilistics software solution is highly repeatable and can be installed identically at other plants, providing a highly scalable solution.

PMO Validation. The data collection installation was validated following a seven-day performance period in accordance with the 2009 PMO.

FDA Certification. The installation was certified by the FDA following inspection as being fully compliant with 21 CFR Part 11. The inspection was completed in less than one day.