



FOOD INDUSTRY

Raw Milk Piping System Case Study **Aguadulce, Panama**

HydroFLOW® S38 reduced chemical use and cleaning requirements in a raw milk piping system, improving efficiency and lowering operating costs.

\$803.52

Annual Chemical Savings

22%

Milk Scale Remover Reduction

21%

Alkaline Cleaner Reduction

15 → 22d

Chemical Duration Extended

⇒ BEFORE & AFTER

● BEFORE

- ✗ Daily chemical cleaning after each milking
- ✗ High use of milk scale and alkaline cleaners
- ✗ Frequent corrective and preventive maintenance

● AFTER

- ✓ Reduced chemical use for pipe cleaning
- ✓ Cleaning chemicals lasted over 22 days
- ✓ Lower maintenance and cleaning burden



BEFORE

Pipe interior with milk scale buildup



AFTER

Pipe interior remained clean

OVERVIEW

Agropecuaria Don Arcelio in Aguadulce, Panama operates a dairy production facility where raw milk passes through piping cleaned with hot water and chemicals after each milking. The system required frequent maintenance, high chemical dosing and extraordinary cleaning every 21 days to manage milk scale and contamination. No changes were made to equipment, washing frequency, or detergents during the evaluation period.

CHALLENGE

Frequent chemical cleaning and maintenance were needed to keep raw milk pipes clean and operating efficiently.

- High consumption of milk scale remover
- Heavy use of alkaline cleaner daily
- Extraordinary cleaning every 21 days
- Hygiene risk from inconsistent residue removal

SOLUTION

Unit installed at the cold water inlet of the electric water heaters serving the raw milk piping cleaning system. Performance was monitored over an extended period, including long-term verification

UNIT INSTALLED

1x **HydroFLOW® S38**

INSTALLATION POINT

Cold water inlet of electric water heaters

INSTALL DATE

23 August 2022

PIPE SIZE

1/2" CPVC pipe



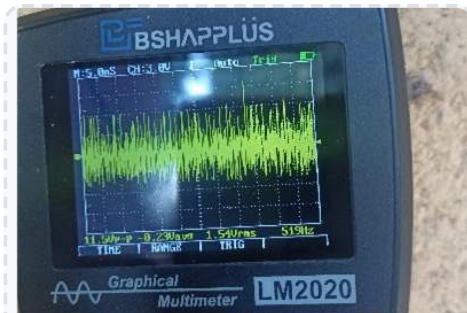
INSTALLATION

S38 on heater inlet



INSTALLATION

Cold water inlet install



MONITORING

Signal monitoring active

RESULTS

\$ Annual Cost Savings

Total annual savings reached \$803.52 from reduced chemical consumption and extended usage.

% Milk Scale Remover Reduced

Milk scale remover was reduced from 900 ml to 700 ml twice daily.

% Alkaline Cleaner Reduced

Alkaline cleaner was reduced from 700 ml to 550 ml twice daily.

🕒 Longer Chemical Duration

Both cleaning chemicals lasted more than 22 days instead of 15 days.

🕒 Verified Performance

System inspections confirmed clean pipe after 30 days and during continued operations

🔧 Stable Operation

No increase in cleaning frequency was required during the evaluation period.

HYDROPATH

The Forefront of Sustainable Water Treatment

KEY TAKEAWAY**Summary**

At Agropecuaria Don Arcelio, Hydropath technology reduced chemical consumption in the raw milk piping cleaning system while maintaining pipe cleanliness. No changes were made to cleaning frequency, equipment, or detergents. Milk scale remover and alkaline cleaner usage both fell, chemical duration increased from 15 to over 22 days, and annual chemical savings reached \$803.52. Monitoring confirmed clean pipe conditions after 30 days and sustained performance over two years, with no increase in cleaning frequency and reduced maintenance requirements.

\$803

ANNUAL SAVINGS

22%

SCALE REMOVER REDUCTION

15→22d

CHEMICAL DURATION

**ADDITIONAL PHOTO EVIDENCE****BEFORE***Pipe condition prior to treatment***AFTER***Sept 23, 2022: Pipe remained clean during use***RESULTS***Sept 30, 2022: Clean after over a month without cleaning***RESULTS***Oct 19, 2022: Continued effective pipe cleaning***RESULTS***Oct 28, 2022: Pipe clean at inspected points***HYDROPATH** **Ready to reduce chemical use in dairy cleaning?**

Get a free consultation for your facility.

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