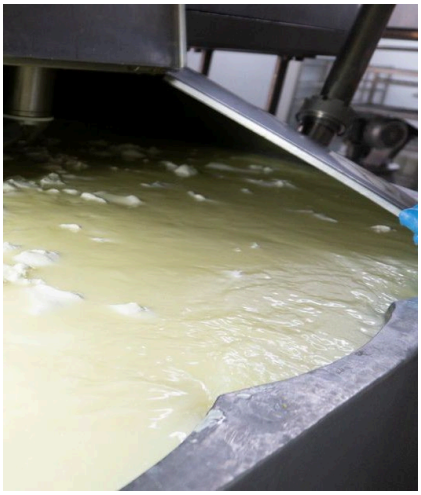
Dairy Factory Water Reuse Solution — OHX AOP Treatment

AusAOP Pty Ltd is a 100% Australian owned and operated company. Our products are manufactured by master boilermakers and electricians in Bundaberg, QLD using locally sourced products and strictly to Australian standards.



Overview

Small- to medium-sized dairy factories typically generate 30–150 kL/day of high-strength wastewater containing fats, proteins, emulsified dairy solids, lactose, detergents, and bacterial loads. Most sites use Dissolved Air Flotation (DAF) as the core primary treatment step. DAF is excellent at removing fats and solids, but it does not address dissolved organics, odour, surfactants, or microbial risks.

By installing our OHX Advanced Oxidation Process (AOP) followed by our integrated polishing system after the DAF, the factory can reclaim treated water for potential reuse such as:

- Internal cleaning & wash-down
- CIP pre-rinse or intermediate rinse
- Cooling tower make-up
- Irrigation and landscaping
- Construction and dust suppression water (onselling)

This transforms wastewater from an ongoing disposal cost into a valuable internal resource.

One module of this modular system treats a 50 kL/day side-stream, allowing dairy factories to **reclaim ~18 million Litres of high-quality water per year**—without disrupting existing DAF/lagoon infrastructure.

Key Benefits

1. Immediate Operational Value

- Provides a reliable, high-quality water supply for daily factory operations.
- Reduces freshwater intake for non-product-contact uses.
- Improves lagoon stability by reducing organic loading.
- Reduces trade-waste discharge charges.
- Supports ESG goals and water-use intensity reductions.

2. Estimated Financial Gains (18 ML/year Case)

- Treatment Capacity: 50 kL/day (18 ML/year)
- System CapEx: ~$110,000 (skid mounted, installed)
- Annual OpEx: ~$5,000/year

Annual Savings / Value:

- Fresh water replacement: $45,000
- Reduced trade-waste/discharge costs: $8,000
- Reduced lagoon load/odour: $3,000

Total Annual Benefit: $56,000

Net Annual Benefit (after OpEx): $51,000

Payback Period: ~2.1 years

10-Year Net Benefit: Over $500,000

Why 18 ML/year?

This 50 kL/day module:

- Fits neatly into existing DAF-based treatment
- Has a small footprint and low energy demand
- Easy approval due to modest CapEx
- Demonstrates value quickly
- Fully modular—systems can be added as water demands grow

Technology Summary

Our OHX AOP:

- Breaks down dissolved organics, surfactants, colour and odour compounds.
- Provides strong microbial disinfection.
- Improves biodegradability of remaining organics for efficient integrated polishing.

Our integrated polishing step:

- Removes AOP-generated biodegradable by-products.
- Stabilises DOC for clear, low-odour, low-bacteria treated water.
- Produces consistent quality suitable for cleaning and other non-product-contact uses.

Drought-Period Wins (Resilience Benefits)

During drought, this system becomes a strategic asset by providing:

1. Water Security
- Ensures reliable access to 18 ML/year of reclaimed water.
- Reduces dependence on bore or municipal supplies.

2. Production Continuity
- Maintains wash-down operations during restrictions.
- Stabilises plant hygiene and operations in low-flow periods.

3. Strong Drought-Year ROI (if water prices rise or restrictions apply)
- Reclaimed water value increases significantly.
- Payback can drop below 1.5 years.

4. Environmental Stewardship
- Reduces pressure on shared community water sources.
- Strengthens sustainability auditing and reporting.

Operational Fit

1. DAF removes fats, oils & solids.

2. Clarified effluent pumped to OHX AOP.

3. OHX AOP oxidises dissolved contaminants and disinfects.

4. Integrated polishing unit polishes and stabilises treated water.

5. Reuse tank provides clean water for operations.

6. Overflow returns to existing discharge route.

Modular Expansion

Start with 50 kL/day, then scale:

- 100 kL/day → 36 ML/year
- 150 kL/day → 54 ML/year
- 200 kL/day → 72 ML/year

Summary

Summary: Why Dairy Plants Choose This System

✓ Converts wastewater into a reusable asset

✓ Reduces freshwater purchases and discharge fees

✓ Provides stable, high-quality water for cleaning & utilities

✓ Lightweight OpEx: ~A$5,000/year

✓ Strong ROI with ~2-year payback

✓ Modular, low-risk, and easy to retrofit

Next Steps

We can prepare a site-specific ROI assessment using your current water costs and discharge fees, available DAF effluent quality, reuse priorities (cleaning, irrigation, utilities), space and power availability.

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