HYDROPATH

Save Water | Improve Lifespan | Optimise Chemicals | Reduce Downtime | Improve Efficiency

Case Study

Victoria & Alfred Waterfront

HydroFLOW® reduced marine fouling in a seawater cooling system, improving flow, lowering maintenance, and enhancing heat exchanger efficiency over a six-month trial.

Overview

The Victoria & Alfred Waterfront in Cape Town is one of South Africa's most prominent mixed-use developments. To support its infrastructure, seawater is drawn from Table Bay Harbour and circulated through heat exchangers. Over time, marine growth—including barnacles, mussels, and biofilm—accumulated within the pipelines, leading to reduced flow, blocked strainers, and frequent maintenance.

To address this, a *Hydro*FLOW iCustom unit was installed in November 2023 on one of the 200 mm seawater lines feeding Heat Exchanger 4. The trial aimed to control biofouling, reduce cleaning needs, and enhance the efficiency of the cooling system.

Challenge

The seawater intake system experienced ongoing marine growth—including barnacles, mussels, and biofilm—that accumulated inside the pipelines. This caused reduced flow, blocked strainers, and disrupted heat exchanger performance.

Additional challenges included:

- Frequent pipeline blockages from sea life
- Manual jetting required to clear lines
- Increased maintenance time and labour
- Efficiency loss in heat exchangers

The objective was clear: implement a long-term solution to minimise fouling and reduce maintenance requirements.

Solution

A *Hydro*FLOW iCustom unit was installed in November 2023 on one of the 200 mm pipelines supplying Heat Exchanger 4 for a 6 month trial. The unit was placed between the seawater pump and the heat exchanger for effective treatment.

Post-installation, the following steps were taken:

- Camera inspection conducted before and after the trial
- Filters monitored for sea life discharge
- System operated continuously during the 6-month period

The trial confirmed stable performance with reduced fouling and maintenance.

Results

Following installation and six months of operation, the system showed clear and lasting results:

- Biofouling Removal – Mussels and sea life dislodged within two weeks
- Prevention – No new marine growth formed during the trial
- Maintenance Savings – Filter cleaning frequency significantly reduced
- Improved Flow – Higher water flow boosted heat exchanger efficiency

The *Hydro*FLOW iCustom unit proved to be an effective, low-maintenance solution for reducing biofouling and maintaining system performance in marine water applications.

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Before *Hydro*FLOW®

Marine growth—including barnacles and mussels—was heavily embedded inside the seawater intake pipelines, restricting flow and increasing the frequency of manual jetting and filter blockages.

After *Hydro*FLOW®

Following installation of the *Hydro*FLOW iCustom unit, sea life was dislodged and flushed from the system. The pipeline interior remained mostly clear, with no new marine growth observed during the six-month trial.

Summary

The benefits of using HydroFLOW technology to control biofouling in seawater intake pipelines were evaluated at the V&A Waterfront in Cape Town, South Africa. Over a six-month trial period, the system was monitored for marine growth, flow efficiency, and maintenance reduction.

All operational goals—including reduced fouling, improved water flow, and lower maintenance requirements—were achieved without disrupting normal operation.

Most significantly, the use of HydroFLOW resulted in measurable improvements in performance and system reliability:

- Biofouling dislodged within two weeks
- No new marine growth observed during trial
- Heat exchanger efficiency noticeably improved
- Labour and filter cleaning frequency significantly reduced

The results confirm HydroFLOW as a reliable, low-maintenance solution for marine water treatment in coastal infrastructure setting

*Hydro*FLOW® units are working all over the world on multiple applications, treating carbonate and non-carbonate scaling and filtration issues in a wide variety of industries.

- From homes to heavy industry
- From spas to steel mills
- Suitable for any pipe material
- From 15mm to 1500+mm OD pipe diameter

Would you like a free consultation?

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