



Final Monitoring Report

Gulf Hotel- Juffair
Kingdom of Bahrain

ScaleWatcher (SW) Water Treatment Report for the
dishwasher system in the main kitchen, 16th November 2016



Objective

OperaKool team is aiming to **provide solution on the challenges concerning the scaling problems in Dishwasher for Kitchen of Gulf Hotel.** Dishwasher are typically used for washing utensils in hotel which produce steam to be used for cleaning and drying of utensils. The usual heating of water to produce steam is always accompanied with challenges that causes so much expenses to the hotel. This water heating- steam production problems are usually:

- Scaling and corrosion affecting the whole system of the steamer unit.
- Algae and bacterial challenges resulting to fouling of odour of the heated water.
- Increased power usage due to variable water parameters affecting the system.
- High maintenance which is an additional operational expenses of the hotel such as replacement and maintenance shutdown of the heating element and the whole steamer unit , periodic cleaning and application of chemical antiscalants.

The problems stated above are the main concern and objectives, this report shows how our team was able to solve them.



Overview

- Installations of SW Commercial Model in the inlet 2” pipe of dishwasher system was on October 4, 2016. (1 set of coil with 40 loops)
- Initial status of some critical areas in the dishwasher were noted:
 - *Hard external scaling were present and affecting the said water applications.
 - *Scaling were noted on the glasses that were being washed by this dishwasher.
- OperaKool recommended a 100% non-usage of chemical water treatment(Broxo Salt water softener) upon full installation of the SW units in order to prove that it is a perfect alternative for the current water treatment implemented by Gulf Hotel- Juffair Maintenance team.



Gulf Hotel, Juffair - Dishwasher System Treatment with SW Electronic Water Treatment





SW Commercial Model installed in the 2" inlet pipe of the dishwasher system with 1 set of coil of 40 loops



Before & After results of SW on Dishwasher within a month of installation

Before treatment (4th Oct 2016), as shown in the image, the surface is dull and rough due to the scale layers present on it



After treatment (6th Nov 2016), the image clearly shows that the surface is shining and is like new equipment



4th Oct 2016, the scaling patches and corrosion are found at the bol nuts edging them and even at the sprayer



6th Nov 2016, the scaling patches are being clearly removed at the bol nut edging them and at the sprayer as well giving it a brand new look



4th Oct 2016, there is a big patch of scaling at the rotator as shown below



6th Nov 2016, the scaling patch is being removed and is not visible anymore and plus it is much shiner and smoother than the previous one.



SW treated the dishwasher as good as if it's a brand new one.



Observations:

- Hard scaling that has developed through time in the dishwasher system has significantly soften.
- The maintenance team is no longer required to bring the heavy chemicals for water softening to the dishwasher.
- There is no rely of any chemicals and time needed to wash the dishwasher with and to scrub it for long to remove scale of minerals.
- The SW commercial has really worked on the dishwasher and has made to appear as brand new without the usage of chemicals.



Conclusion

- Providing an effective water treatment will ensure a significant reduction of maintenance expenses of the hotel, lesser maintenance shutdown of high invested units with longer performance period and minimal concerns on water parameters affecting any system or application.
- Achieving these results will positively increase the revenue of the hotel.
- In order to achieve and maintain the ideal water parameters with a minimal expenses, we are proposing to install an Electronic Water Treatment (EWT) - ScaleWatcher to have a 24/7 water treatment.
- ScaleWatcher is a patented technology from The Netherlands proven to provide solutions to various problems associated with water.
- It is a maintenance free, non-invasive and eco-friendly water solution that guarantees to eliminate scaling, corrosion, biofilm causing the fouling of odour and significantly lower the maintenance expenses for Gulf Hotel.



Recommendations:

- Secure a 24/7 electrical power connection for the SW Electronic Water Treatment System.
- Monitor the status of the dishwasher and check the inner surfaces of the system and compare to the records of expenses before the SW was installed.
- Check the status of the progress of conversion the red rust and the intensity of water leaking. This will heal through time by converting the red rust into its beneficial form- “Black Magnetite”.
- Installation of SW Commercial and Industrial Models for the inlet water line of main storage tank, RO system, washing machine, steamers, chillers, pumps, swimming pool and spa area to significantly reduce maintenance expenses and provide protection to extend functionality of the said high-value equipment.



ScaleWatcher(SW) Guaranteed Product Benefits:

- 24/7 water pH stability ensuring no scaling, corrosion, biofilm and algae to develop in the water; meaning a healthy water source for the users.
- Removes old scale layers and prevents further build-up of new scales.
- Improves cleaning properties of water resulting to lesser amount used resulting to savings for the company.
- Reduces or prevents algae and bacterial growth in the water line (ex. Legionella).
- Eliminates and reduces corrosion and removes rust and replaces it with a black layer called Black Magnetite.
- Zero usage of water softener and other chemical treatments (ex. Broxo Salt).
- No chemicals for descaling.
- No expensive maintenance, non-invasive system and guaranteed environmentally friendly.
- Guaranteed protection of pipeline with lesser maintenance costs and shutdown.
- Prolonged shelf life of existing system or high invested system such as water pumps, filtration and pipelines.
- Increased water pressure in the pipelines and higher water yield for the RO system.
- Cleaner status of drinking glasses, plates and cutlery with no undesirable water markings resulting to its longer usage of the company as compared before the installation of ScaleWatcher.



Benefits

–ScaleWatcher will Save

- Money
- Energy
- Water
- Time
- Safe and Environmentally Friendly



Quality Assurance on SW Mode of Action- Health Declaration Assurance Aligned to EU Standards

Health Declaration

Most natural water contains calcium and carbonate ions that form – depending on temperature and other conditions – several crystal structures like calcite and aragonite. Calcite is essential for the human body – so it should remain in the water. But it should not remain in the pipe, as this would increase maintenance costs.

Scalewatcher treatment follows this rule: It does not remove any calcium components from the water, but influences crystal formation. Calcium and Carbonate ions no longer form particles with matted structures, but smaller crystals with a rounded shape. These will no longer adhere to the pipe walls, but are flushed through the pipe by the flow of water.

The Scalewatcher electronic hard water treatment system operates with a signal cable, wound around the pipe work. It emits a weak magnetic and electric field around the inside and outside of the pipe work which affects the calcium molecule formation.

The Scalewatcher system neither adds nor removes anything from the water and there is no physical contact. **So the water quality is not changed by the Scalewatcher. It has no adverse effect on health and can be consumed in the normal way.** In the stomach, the Ca-related content is dissolved by the acidity and available for the human metabolism.

Since 1989 over 300,000 units have been sold worldwide for residential use. There has never been any suspicion that related a Scalewatcher system to health problems of consumers nor has there been any reference to health problems associated with the product from any organization either government or consumer.

Good drinking water is rare and expensive. So SW treatment will not change water quality, but will protect pipes and water related equipment and reduce maintenance costs. That's what the SW is made for.



The World Green Building Council specifies only NON-CHEMICAL water treatment such as the FMW/SW, currently registered with the US and UK Green Building Councils.



OperaKool

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Your SERVICE
SPECIALIST in saving
water, money and
energy for the
Kingdom of Bahrain
and the rest of the
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Testimonials of Satisfied ScaleWatcher Users Bahrain and Other Countries

