



Monitoring Report

Sofitel Khobar

ScaleWatcher Installation Report for RO System

3rd May 2023



Objective

Opera Kool team is aiming to **provide solution on the challenges concerning the scaling, corrosion and microorganism problems in RO systems, Sofitel.** Scaling for RO means the deposition of particles on membranes and fittings, causing it to crack. It is an unwanted effect that can occur. Corrosion causes decaying of membranes and other fittings because these will need cleaning more often. The other problems faced in the RO are:-

- Scaling and corrosion affecting the whole system of the RO.
- Algae and bacterial challenges resulting to fouling of odour of the water in the system.
- Increased power usage due to variable water parameters affecting the system.
- High maintenance which is an additional operational expenses of the property such as replacement and maintenance shutdown of the unit , periodic cleaning and application of chemical anti-scalants and acids to clean the membranes.

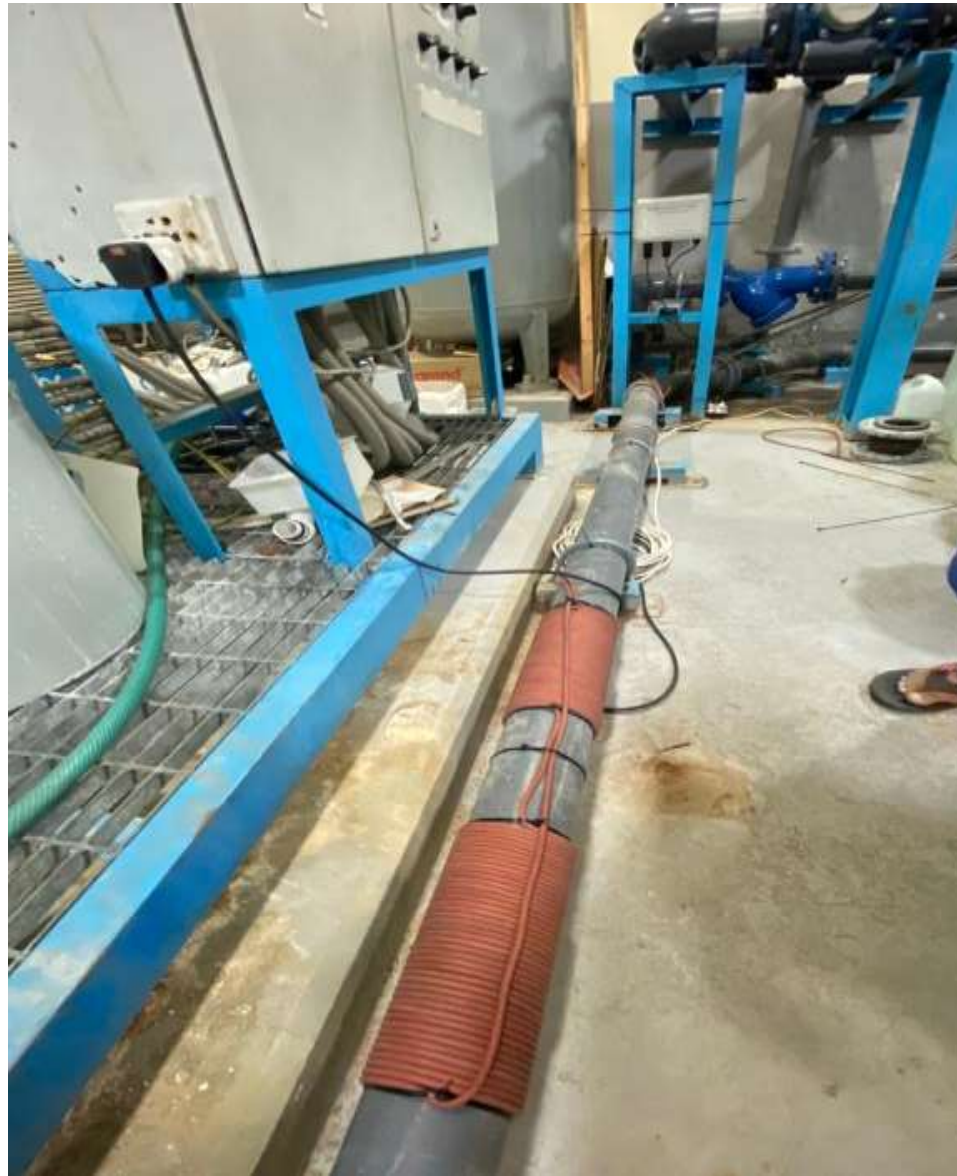
The problems stated above are the main concern and objectives, this report shows how our team was able to solve them.



Overview

- Installation of SW Commercial Model in the main inlet pipe before RO System was on 16th March, 2023.
- Initial status for each application was noted:
 - * External scaling and leaking of the pipe and fittings of the RO system were noted with pictures as reference point to monitor the effect of SW water treatment system.
- Progress for each application were closely monitored with each respective supervisor.





Before & After results of SW on RO system



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 1), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 1), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 3), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 3), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 4), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (16th March 2023), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 3), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (week 1), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 6), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Before treatment (week 1), as shown in the image, the gauge pressure is high for lots of pressure to pump water



After treatment (week 6), the image clearly shows that the pressure in gauge has dropped due to melting of scaling in the pipeline



Observations:

- Hard scaling that has developed through time in the system has significantly soften.
- The maintenance team is no longer required to bring the heavy chemicals for water softening.
- There is no rely of much chemicals and time needed to scrub for long to remove scale of minerals.
- The SW commercial has really worked for the RO system and has made to appear as brand new with less usage of chemicals.



Conclusion

- Providing an effective water treatment will ensure a significant reduction of maintenance expenses of the property, 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 property.
- 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 Sofitel Khobar.



Recommendations:

- Secure a 24/7 electrical power connection for the SW Electronic Water Treatment System.
- Monitor the status of the RO and check the inner surfaces of the membranes 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 glossiness of the water. 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 circulation filter system for pools, RO system, washing machine, steamers, chillers, pumps 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 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.

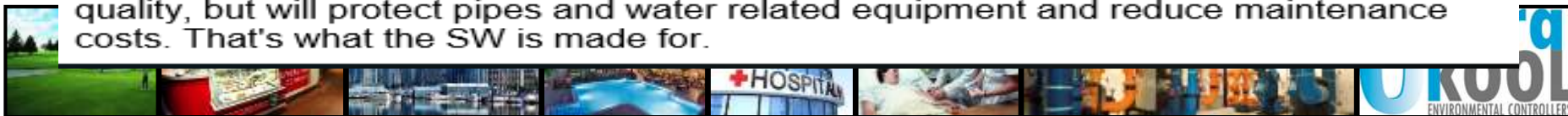
Scalewatcher treatment follows this rule: It does not remove any calcium components from the water, but influences crystal formation. Calcium and Carbonate ions no longer form particles with matted structures, but smaller crystals with a rounded shape. These will no longer adhere to the pipe walls, but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





Your SERVICE
SPECIALIST in saving
water, money and
energy for the
Kingdom of Bahrain
and the rest of the
GCC Region



Team OperaKool #@yourservice

