

# Environmental Controls & Methods, Inc.

Energy Efficiency & Water Quality Solutions



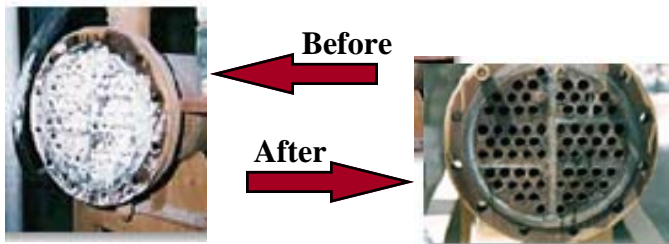
HydroFLOW models provide complete flexibility for the effective treatment of hard scale in water systems of every type and size, with both industrial and domestic units.

HydroFLOW generates a powerful conditioning effect over long distances of pipe networks without water having to flow past the signal generator.

## Plated Heat Exchanger

**Site:** Shanxi Coal Building is an office and hotel complex. Three-plated heat exchangers connected in series supplying hot water to the complex. Water hardness - 200-250ppm. Before **HydroFLOW** was installed, traces of scale were seen on two-plated heat exchangers. Routine monthly cleaning was needed to maintain the heat exchanger's efficiency and to provide enough hot water supply for the complex.

**Result:** One C-100 was installed on Oct. 2002. On Jan 2003 the customer reported that the plated heat exchangers did not need cleaning. All traces of scale on the two plated heat exchangers disappeared.



## Paper Pulp Industry

**Site:** Phoenix Paper Mill Factory, Nanning, China. Every two weeks, production at the factory had to be stopped for 1 day for cleaning due to hard scale formation at different parts of the production line. A Chinese made electronic descaler was used previously, and proved to be a total failure. **HydroFLOW** installed April 2001.

**Result:** Five months after installation, there was no need to stop the production because of scale. The factory estimated that it saved \$85,000 on cleaning and work stoppage.



**500,000+ INSTALLATIONS**  
**WORLD-WIDE**  
**WITH 100% CLIENT SATISFACTION**

## Rapid Return on Investment



### Hydropath

In 1992 British Gas, along with the inventor, developed and funded new western technology to treat scale. Within the first two years British Gas, along with the inventor, installed 4000 units.

### Cooling Tower

**Site:** Ki Mei Hospital, Taiwan Ki Mei Hospital is a prestigious hospital in Taiwan. Water hardness above 150ppm. **HydroFLOW** installed June 2002. Permanent magnet type water conditioners were used in some hospitals in Taiwan before, without success.

**Result:** The condenser was operated at its full efficiency after **HydroFLOW** was installed. Blow down at the cooling tower was carried out once a month in the winter season and once a week in the summer. Chemical dosage was totally eliminated. The hospital authority was so pleased with **HydroFLOW**'s performance, that they recommended **HydroFLOW** to other hospitals in Taiwan.



Buddhist Tze Chi General Hospital (Taiwan)

## Heat Exchanger on Production Line

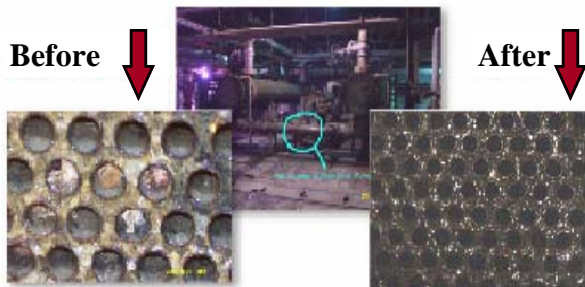
**Site:** Salaya Industrial Co. Ltd. (Thailand) There were 10 injection machines in the Salaya plastic factory. Water hardness in the area was 380ppm and chemicals were used to prevent scaling. The cooling tower and heat exchanger had to be cleaned bi-weekly. A **HydroFLOW C-60** was installed in June 2002.

**Result:** Water hardness in the system was monitored during blow down at the cooling tower. Water softener chemicals were eliminated. One month after installation, old scale in brown sediment form was found in the cooling tower. It took only 10 minutes to clean the dust in the cooling tower every month. There was no hard scale within the heat exchanger and no more overheating occurred among the injection machines.



## Solution for Biofouling a Power Station

**Site:** Da Lin Power Station, Taiwan. Seawater was used as a coolant in the heat exchanger. Scaling was not a big problem. The problem was biofouling. Studies show that a layer of 250 microns thick micro fouling can reduce heat transfer efficiency by up to 25%. Micro fouling also reduces water flow and increases corrosion. At Da Lin Power Station, each exchanger operated for two months, then it took three days or more for cleaning.



**Result:** November 2003, **HydroFLOW** installed. After two months, the heat exchanger was opened for inspection. Biofouling was eliminated. Cleaning was done by spraying water and took one hour.



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## Furnace Cover in the Steel Factory

**Site:** Jinan Steel Factory, China. The steel furnace cover, shown in picture A, has 160 pipes at 3.8mm diameter inside the cover. Temperature at the furnace is at 18000. Water passed through these pipes to reduce the heat. When hard water was used, pipes became blocked with scale. Production had to be stopped and the blocked pipes had to be by-passed. It was a routine practice to stop production every week to by-pass the blocked pipes. It was estimated that it cost more than \$6,000 for each interruption in production. In addition, a new cover had to be installed every 6 months. Water hardness - 320-380ppm.

**Result:** There were three production lines in the factory and one **HydroFLOW C-160** was installed for each line. After 6 months of installation, two production lines never had to be stopped because of scale blockage. The third line was only stopped twice during the same period.

## Other Hydropath Installations:

- 1) Hong Kong University of Science & Technology – Pool
- 2) YMCA Hong Kong – Indoor Pool (Hong Kong)
- 3) Nikko Hotel – Indoor Pool (Hong Kong)
- 4) Leung Fung Plastic Factory (Taiwan)
- 5) Siam Plastic Products Co. Ltd. (Thailand)
- 6) Steel Factory in Shangdong (China)



**How are you controlling the costs associated with scaling and fouling at your facility?**

## What are your costs for:

- Maintenance
- Equipment Cleaning
- Chemicals
- Loss of Efficiency
- Reduced Equipment Life
- Hazardous Waste Removal

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