



# **The Electronic Anti-Scale System**

## Reference Book

CWT  
Christiani  
Wassertechnik

August 2016 - EN  
**Vulcan Reference Book**



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# Over 60 Years

## CWT - Christiani Wassertechnik

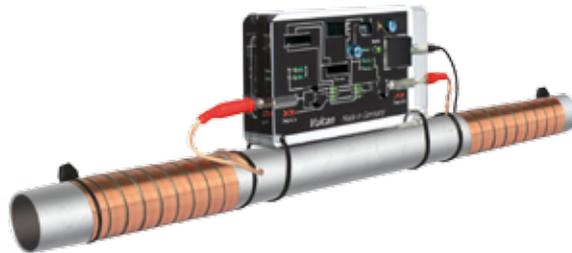


CWT is a family owned and operated business with its own factory for water treatment technologies in Germany. The production of the highest quality devices with the most advanced technology together with the continual research and commitment led to the success of the product line:



### The electronic anti-scale system

The green alternative to water softeners



In this booklet you will find a selection of references by private, commercial and industrial users of the Vulcan anti-scale units. A number of independent studies reflect on the eco-friendly technology of physical water treatment in general and on the Vulcan-Impulse-Technology in specific. You will also find numerous independent studies and scientific papers on the principle of the eco-friendly physical water treatment and on the Vulcan units.

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### CWT Contact

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10997 Berlin  
Germany

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[www.cwt-international.com](http://www.cwt-international.com)

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[www.vulcan-descaler.com](http://www.vulcan-descaler.com)

USA dial: +1 (917) 300-0494  
UK dial: +44 (0)20 331 88 638



# Restaurants and Food Production



## Kitchen of Spokane School

USA

### International Water Treatment NA LLC

2607 Bridgeport Way W Ste.1J  
University Place, WA 98466  
www.iwtna.com

## Vulcan in a School Kitchen

Dear CWT Team,

The steam convection oven has greatly improved since the installation of the Vulcan. The water is injected via the pipe in the centre of the heating coils and a fan inside the coils blows the water through the coils and comes out as steam. The operating temperature of this device is 350F. The white material you see on the coils is a powder coating that is easily removed with a wet cloth. No more chemicals are required to clean the convection oven.

However, we have noticed even greater results in the school kitchen, which was previously using a traditional water softening system. But all in all, we can confirm the effectiveness of the Vulcan treatment, which means less work for the maintenance staff.

The Vulcan unit installed on the entire building system has also been extremely effective. No more rusty water after weekends and Christmas break. The next Vulcan will be installed on the other school buildings, which are around 20 – 25 years old.

The last Vulcan unit is installed on the main cooling tower – we have had nothing but positive news in regards to this installation. We will be seeing more orders coming from this customer very soon.

Best Regards  
Arne Vestad



## Waffle House Restaurant

USA



### Installation details

Model: Vulcan S25

Location: Waffle House  
Tallahassee  
Florida

Installation area: Water main

Installed by: Ackruitlabs, Inc.



## White Castle Restaurant - Indianapolis

USA



### Installation of Vulcan water treatment



**Installation site:** White Castle #49, Indianapolis, USA  
**Model:** Vulcan 3000 (installed on the in the line after the carbon filters)  
 Vulcan 5000 (installed on the main inlet line, before the 5 micron carbon filters)

#### White Castle #49 – April 14

The R2D2 had been in service only 3 weeks and you can see the stainless steel is already etched at the water line. The water feeding the R2D2 was changed to being fed after the standard 25 micron but before the 5 micron carbon filters.

The Vulcan 5000 is located in the main line, but before the 25 micron filter. The Vulcan 3000 is located in the line after the carbon filters.

The installation of Vulcan 3000 and Vulcan 5000 solved this hard build-up problem successfully.



Before Vulcan installation - calcium lines present on stainless steel after only 3 weeks.

#### Before using Vulcan - April 14

Hard calcium deposits in the pan.



#### After installing Vulcan - May 12

95% less calcium deposits in the pan



After this very successful using of Vulcan in our White Castle restaurant #49 in Indianapolis, we installed the Vulcan 3000 and Vulcan 5000 device also in the White Castle restaurant #32 in New York and the White Castle restaurant #38 in New Jersey.

## White Castle Restaurant - New York

USA



### Installation of Vulcan water treatment



**Installation site:** White Castle #32, New York, USA

**Model:** Vulcan 3000 (installed on the ice machine after the carbon filters)

Vulcan 5000 (installed on the main inlet line)

#### White Castle #32 – May 5

We installed a Vulcan 5000 on the main inlet line to White Castle 32 & a Vulcan 3000 on the ice machine after the carbon filters.

The R2D2 was cleaned and the calcium completely removed in one area. There is a slight indentation into the pan at the water line.



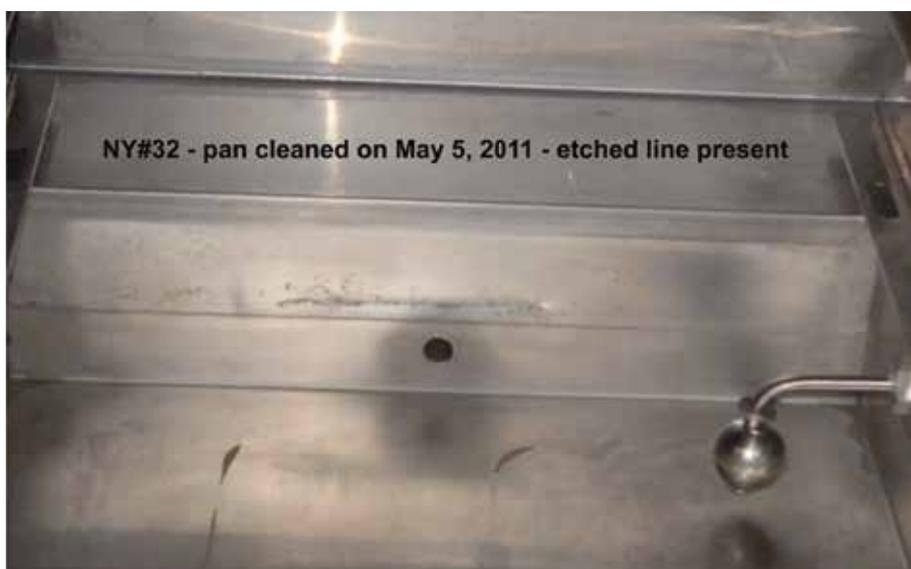
Vulcan 5000 on main water inlet - NY32 - May 5



Before Vulcan installation - hard scale build up in the pan area



Vulcan 3000 mounted after the carbon filters NY32 - May 5



After Vulcan installation - pan area is now completely scale free

## Mövenpick Restaurant

Germany

Mövenpick Restaurant  
Potsdam



Christiani Wassertechnik GmbH  
Charlottenstraße 18

10117 Berlin

### Reference Letter

Dear Sir,

our Mövenpick Restaurant opened in January 2000. After a short period of time we noticed a high level of limescale developing on the ice-cream makers. These calcification's could only be cleared bit by bit which is a time consuming process. To avoid potential losses, a short-term limescale filter was installed. The operating time of this filter is limited however and thus resulted in high costs.

At a trade fair visit we consulted the company Christiani Wassertechnik GmbH about other possibilities. We installed the limescale converter Vulcan 5000 and the ice-cream makers have been functioning smoothly for 10 months now.

The limescale, which accumulates especially in the crushed ice makers, can now be easily removed as it is converted into fine-grained structures.

We wish the company Christiani further success with their excellent products.

Yours Sincerely,

Marcel Charrier  
Director

Mövenpick Zur Historischen Mühle Sanssouci  
Zur Historischen Mühle  
14469 Potsdam  
Tel.: 0331 / 281 49 93  
Fax 0331 / 281 49 50



Vulcan 5000



Vulcan protecting the ice machine



Vulcan protecting the ice-cream makers



Soft limescale is now easily removed

Mövenpick Restaurant, Potsdam

[www.moevenpick.com](http://www.moevenpick.com) | Mövenpick Restaurants Deutschland GmbH

## o2 Water Margin Restaurant

United Kingdom



The O<sub>2</sub>



To whom it may concern,

We are a very busy 300-seat restaurant at the O2 London Arena and have had major problems in the past with lime scale in our glass and line washing machines, sinks, food warmers and toilets. We have installed various products in the past to remove this scale with little success, resulting in higher maintenance and replacement costs along with increased expenses on cleaning equipment.

Since CWT Partners Ltd installed the Vulcan S25 at our premises we have noticed substantial and continual improvement over the past 3 months. Our food warmers, steam ovens, kitchen sinks and restrooms are clear of scale, along with cleaner crockery and cutlery. This has helped to reduce the detergent and cleaning equipment and products, which has saved us more than the cost of installing the Vulcan S25. The restaurant is now able to operate at a higher level, avoiding lime scale and rewashing of dishes, with far fewer complaints from customers.

It is a pleasure to inform you that we are very satisfied with the Vulcan S25 descaling unit. Additionally, we would like to single out the professionalism of the CWT team that addressed our lime scale problem and like to thank them for all their help. We highly recommend the Vulcan water treatment and urge others clients to install it.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Chin Lam".

Chin Lam  
CEO



**Novari (at the O2) LIMITED**

Registered office: 23 Entertainment Avenue, The O<sub>2</sub>, Greenwich, London,  
SE10 0DY

# Cricklewood Restaurant

USA

## Vulcan Descaler in Cricklewood Restaurant

Santa Rosa, California



CWT Distributor: Quest Green Solutions  
Santa Rosa, California  
E.E. U.U.

Location: Cricklewood Restaurant  
Santa Rosa, California  
E.E. U.U.

Unit installed: Vulcan 3000



Scale free dishwasher



Vulcan 3000



## Wolfies Waterfront Grill

USA



Salt-Free Water Systems, LLC  
1429 Casco Bay Circle  
Cicero, IN 46034  
Attn. Jim Schneider and Dick Van Voorhis

Dear Jim and Dick,

I want to let you know how satisfied I am with the results using the Vulcan 5000 water conditioner in my restaurant, Wolfies Waterfront Grill in Noblesville, IN.

Here are the positive results using the Vulcan system:

- The Vulcan immediately solved a problem with our restroom water fixtures.
- The Vulcan eliminated our water softener, along with the required salt and water consumption.
- The Vulcan drastically reduced our dishwasher soap usage.

With this environmentally friendly product, the above savings resulted in a return on investment within 6 months.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Wolf".

Scott Wolf  
Owner, Wolfies Waterfront Grill



Wolfies WaterFront Grill Restaurant, Noblesville  
Noblesville, Indiana 46062

## Fazer Chocolate Production Factory

Finland

# Fazer Chocolate



**Location:** Fazer Konsernijohto  
Fazerintie 6, Vantaa  
PL 4  
00941 HELSINKI

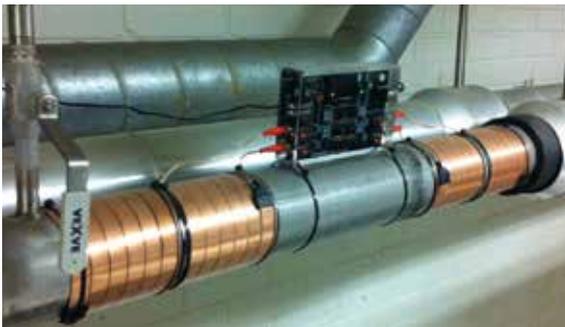
**Installed by:** VesiTekno Oy  
Ylästöntie 121 A  
01740 Vantaa  
Finland  
[www.vesitekno.fi](http://www.vesitekno.fi)

### Fazer confectionery

Fazer is Finland's leading confectionery company and one of the leaders in the Baltic Sea region and Russia. The company was originally founded by Karl Fazer in 1891, as a "French-Russian conditory" in central Helsinki.

In the confectionery business, Fazer is the market leader in Finland and a strong player in the Baltic Sea area, exporting products to more than 40 countries. Among Fazer's strong international brands are Karl Fazer, Geisha, Dumle, TuttiFrutti, Xylimax, Marianne, Tyrkisk Peber, Pantteri and Ässä.

Fazer's confectionery factories are located in Finland, and this is where the Vulcan S25 unit has been installed. This unit has been placed on the cooling system, used in the production of chocolate.



### Model installed:

Vulcan S25

### Installation area:

Cooling system used in the Fazer chocolate production factory in Helsinki



### Fazer Factory:

Aerial shot of the Fazer chocolate production factory in Helsinki

## Bigard Meat Factory

France



[www.bigard.fr](http://www.bigard.fr)



**Vulcan installed at:**  
BIGARD Meat Factory  
France

**Installed by:**  
CWT Preval France

**Model installed:**  
Vulcan S25

### BIGARD Meat Factory

Bigard Group is the leading meat processor in France (processing more than 500,000 tonnes per year).

The Vulcan S25 device has been installed on the machine responsible for washing the white containers which have barcodes located on the side.

Before installing the Vulcan unit, the scanning machine could not read barcodes due to scale incrustations. Now after installed Vulcan, the machine is able to read these bar codes correctly. Bigard is now saving on maintenance costs and reduced time spent on cleaning the washing machine and white boxes.



Washing machine used for the white containers



White containers and barcodes are now free of scale



Vulcan S25 unit installed with insulation re-wrapped over the pipes and impulse cables

## Grease Trap in a Food Factory

Japan

### Grease trap measures in a food factory

### Installation example

Dear CWT Team,

The Vulcan unit has a trouble free design and easy installation. The LED light always blinks dependably as it shows the processing conditions.

I have compared the state of the grease trap before and after installing the Vulcan. Before installation, I noticed strong odors when opening the hole. When I opened the hole a month after installation, no such odors were present.

As for the cleaning intervals, monthly cleaning may now not be required.

The effect and cleaning intervals of Vulcan will require an annual observation, however, I believe the amount of cleaning will be reduced remarkably.

Regards,  
Factory Manager



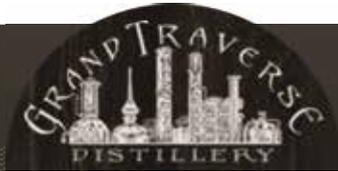
Before Vulcan installation



3 months after installation - grease is more consistent and less cluttering

# Grand Traverse Distillery

USA



## Details of Installation

Model: Vulcan 3000

Location: Grand Traverse Distillery  
Traverse City, MI 49686

Area of installation: Inlet water main

Installed by: Salt-Free Water Systems LLC  
1429 Casco Bay Cir.  
Cicero, IN 46034  
[www.vulcan-usa.com](http://www.vulcan-usa.com)



Vodka Distillery



Grand Traverse Distillery



Scale desopits removed after installing the Vulcan 3000

## Eberswalder Wurst Sausage Production

Germany

### EWG Eberswalder Wurst GmbH

*Eberswalder ... Richtig gut die Wurst*



EWG Eberswalder Wurst GmbH

Christiani Wassertechnik GmbH

Heinrich-Heine-Str. 15

52249 Eschweiler

Dear Sir,

We have been using your Vulcan-Impulse-Technology for over a year with great success.

Despite the use of chemicals during the pasteurisation of vacuum-packed sausages such as hard water stabilizing agents and corrosion inhibitors, heavy scale deposits accumulated in the pipes and the holding tanks which could only be cleared through intensive chemical purification several times throughout the year.

Six months following an intensive purification and the installation of your Vulcan technology, only very few deposits in the warming zone and none at all in the cooling zone could be found.

These deposits need now only to be cleared once a year at a considerable lower cost.

We wish you further success with your technology against scale and rust

  
Helmut Schwendler  
Director of Engineering

# EWG Eberswalder Wurst GmbH

*Eberswalder ... Richtig gut die Wurst*



Installation by Christiani Wassertechnik Germany



Vulcan S25



Sausage packaging line



Mr. Christiani at installation of Vulcan



Production line

## K & P Zimmermann Cheese Dairy Production

Switzerland

K & P Zimmermann  
Cheese Dairy  
2333 La Ferrière  
032 961 11 53

**CWT International**  
**Mr. W. Kurt**  
**4103 Bottmingen**

**La Ferrière**

**CWT Vulcan S25 - 3 months-test in the cheese dairy and apartments of K&P Zimmermann  
in La Ferrière in Switzerland**

The chrome pipes have visibly less scale deposits and it is much easier to clean them - just with a damp cloth and no chemicals are needed. Also in the pans, the scale doesn't attach so much and it is easy to remove.

One month after the installation of Vulcan S25, we made a test with a rusty nail. After two weeks the nail was clean.

Summary: For us Vulcan is the easy solution against scale and rust and keeps our piping system and appliances clean. We need less maintenance and save money with it.

Best Regards  
K. Zimmermann



A blue ink signature, likely of Kurt Zimmermann, written in a cursive style.

## Marcel SINAI "Les Aires" Olive Oil Production

France

**Marcel SINAI**  
" Les Aires "

Route du Destet - Quartier des Calans  
13520 MAUSSANE LES ALPILLES

CWT  
Köpenicker Str. 154  
10997 BERLIN  
Germany

**Reference: 12102680 Vulcan 5000**

Dear Sirs,

I purchased this unit at the BATIMAT trade fair in Paris under the reference 21623.

The Vulcan descaler model is installed and is functioning correctly as we no longer have traces of limestone on our ro-binneterie GROHE stainless steel. The water in our region (la Provence) is particularly limestone rich.

Best wishes.

Marcel SINAI



Producer of olive oil



## Fritz Häcker Gelatine Production

Germany

Fritz Häcker GmbH + Co. KG . Postfach 1265 . D-71655 Vaihingen/Enz

To  
Christiani Wassertechnik GmbH (CWT)  
Attn. Mr. Cedric Christiani  
Köpenicker Strasse 154

10997 Berlin



### Water Treatment System VULCAN

Dear Mr Christiani,

We are a company in the adhesives industry originating from the production of gelatin. Traditionally a high amount of water is required for the extraction process to produce gelatin. For this we have our own deep wells from which the required water is drawn. Due to the area's geology, the ground water is relatively hard which inevitably results in thick layers of adherent limestone in the tanks. Some of which only were removable by using chemical substances. The water heater was also subject to relatively quickly calcification.

To remedy this, we have already taken one of your Vulcan systems into operation in the central hot water supply. We were stunned by it's results, especially as the opinion about this kind of water treatment systems is very much divided.

The physical treatment of the water by Vulcan caused a significant reduction of adherent limestone in the tanks and piping surfaces. Decalcification actions had to be executed in considerably larger intervals, which results in considerable lower costs.

We are convinced of the viability of these systems and can only find words of praise for the service given. On this basis, we will certainly continue to work together.

Best regards

  
Fritz Häcker GmbH+Co.KG  
General Management  
Klaus Bohne

## Delice Danone Dairy Production

Tunisia



### Installation Details

Model:	2 x Vulcan 3000
Location:	Delice Danone Usine Tunisia
Installed by:	STPE sarl Tunisie

### Delice Danone Factory - Tunisia

The Fresh Dairy Products division manufactures and sells dairy products and other fermented dairy specialties. In this context, Danone relies on its ability to develop its range and continuously introduce new products in terms of flavor, texture, ingredients, nutritional content or packaging. Their brands include Activa, Oikos Greek yogurt & Danone children's yoghurt.



Milk production



Milk production



Vulcan 3000 installed in the Delice Danone factory



Vulcan 3000 installed in the Delice Danone factory



**Hotels**  
**Apartment Buildings**  
**Spas and Wellbeing**



## Sage Hills Motel

USA

Quest Green Solutions  
The Vulcan Descaler  
P.O. Box 6662  
Santa Rosa, CA

## Sage Hills Motel

To the Quest Team,

We have sent you this letter to advise results after purchasing the Vulcan 5000 from your office. We are an 18-room motel located in the town of Cache Creek, British Columbia, Canada; approximately 4 hours drive north east of Vancouver, B C.

We purchased your product due to the continuous hard water problems related to cleaning issues and hard water build-up. Our most obvious problems were in our bathrooms where we found after a few years it became impossible to remove hard water build-up on and along and close to the caulking areas of bathtubs and the surround shower walls. We found that after 3 or 4 years we would have to replace the surround shower walls.



The toilets constantly had waterline and water fall stain build up in the bowl, the bathtub and bathroom sinks and taps also displayed hard water stain. Our guest room water glasses despite putting them through a dishwasher would not come clean, typically they would display blotching or drips drying with mineral build up. Our white linens did not stay "clean white" for long and displayed a darkened white after a couple of months.



Our hot water tanks and hot water copper lines continuously had to be unsoldered at elbows and joints every few years to clean out the scale- encrustation build-up as the water pressure to the rooms lost pressure.

When we first had a look at the elbows we were horrified to see just a little more than a pinhole in some of the water lines getting through. Our guest room kettles had a build up of minerals that were obvious to the point where we would have to have to flush them out on a regular basis.

**Upon purchasing the Vulcan 5000 the first thing we noticed was that it really was easy to install with no hidden surprises. Within a few days we noticed that the guest room water glasses were truly sparkling clean, no blotching, all crystal clear. We were very happy with this result. The chamber maids have reported back that the taps and faucets are easier to clean and I must say they do appear shinier and clean, although we expect as time goes by they will become cleaner and newer looking.**

The blotching in the tubs and surround walls has improved all though the best test will be to see what happens in a year from now and on new installs. Although its difficult to tell at this early stage we assume the lines will start clearing over time given the results we have seen so far. Typically the signs of severe hard water build-up start with turning on a tap in our laundry room and after a short period without adjusting the tap flow, the flow gets less and less. We then start the process unsoldering and cleaning out the pipes manually. We expect this process will now not be required. We have had the Vulcan 5000 in place now for just a short period of time (month and one half) and are definitely pleased with the quick results so far.

Sincerely,  
Hal and Karen  
Sage Hills Motel

## Royalton Punta Cana Resort & Casino

Dominican Republic

**Location:**

Memories Splash Punta Cana  
Punta Cana, Dominican Republic  
[www.grandparadisebavaro.com](http://www.grandparadisebavaro.com)

**Installed by:**

Interclima

**Models installed:**

2 x Vulcan S500  
1 x Vulcan S100



Aerial view of the Memories Splash Punta Cana

**Application:**

The Royalton Punta Cana Resort & Casino is a 1000 room resort located on the beachfront in Punta Cana, Dominican Republic.

Two Vulcan S500 were installed on the main input pipe in order to combat scale build up and increase efficiency of the three cooling towers.

A Vulcan S100 is also installed on the resorts main hot water system, in order to remove and prevent scale build up in the heaters/boilers, which provide hot water throughout the entire resort and casino.



Vulcan S500 protective casing



Vulcan S500 cable windings

## Design Hotel Q!

Germany

**Q! Hotel - Knesebeckstr. 67 Berlin**

CHRISTIANI Wassertechnik GmbH  
Heinrich-Heine-Str. 15  
D-52249 Eschweiler



**Re: Letter of recommendation from Hotel Q!**

Dear Mr. Christiani,

It is a pleasure for us to inform you that we have been very satisfied with the Vulcan descaling unit with which you have supplied us.

As we are engaged in the hotel business and committed to cleanness, doing our best endeavors to combat lime-scale is all the more important to us. In respect with the daily cleaning of the guest rooms as well as the hotel facilities in general it is of paramount importance to maintain a high level of cleanliness, and the unit you have provided us with helps us a lot to attain this goal.

The Vulcan S25 unit makes the daily cleaning of our hotel facilities easier and also allows us to save a lot on cleansing agents for it is no longer necessary to use as much of them as we used to before.

I would like to single out for praise the fact that the scale converted by this device no longer settles on fittings and panes of glass as it usually did before. Which enables us to maintain showers and fittings free of lime-scale without any trouble.

Therefore, our hotel will gladly recommend this unit to other clients. We would also like to thank you for granting us a trial period to test your device.

Yours sincerely

Gordon Deckelmann  
Technical Director/ Maintenance

## Hotel Mercure Munich

Germany

Leopoldstr. 120 • 80802 Munich • Germany

CHRISTIANI Wassertechnik GmbH  
Heinrich-Heine-Str. 15  
D-52249 Eschweiler



**Re: physical water treatment unit Vulcan S100**

Munich

Dear Mr. Christiani,

We are pleased to inform you that the water treatment unit has been working perfectly and to our full satisfaction ever since its installation.

Only a short time after that we observed that we no longer needed acetic or absorbic acid in order to clean the showers and shower heads in our hotel, which has more than 65 guest rooms, since the scale that builds up now is no more than a layer which is easy to wipe off. Due to the fact that the efforts employed at maintaining the sanitary facilities can be kept to a minimum, and resulting from the smaller electricity consumption, we are able to economize. Simultaneously, we also make an active contribution to environmental protection by renouncing on aggressive cleansing agents.

We are glad to own a water treatment unit that is compatible with the environment and which renders the optimum output at low running costs (approx. 10 € on electricity costs/year). Moreover, this unit has finally provided us the solution to a problem we had been confronted with day by day and which was difficult to put up with.

Given our satisfaction it will always be a pleasure for us to recommend your company and your product to other clients.

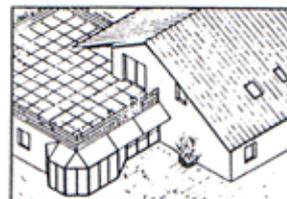
Sincerely yours,

Horst Schneider  
Director

## Hotel Cadolzburg

Germany

### HOTEL-KURBAD ZUM WASSERHAUS CADOLZBURG



Christiani Wassertechnik GmbH  
Heinrich-Heine-Str. 15  
52249 Eschweiler

#### **Your water treatment device Vulcan 5000 four week test**

With this letter I would like to give you some insight into our experience with your water treatment system.

We have a water hardness level of around 280 ppm in Cadolzburg and as we have a spa, we use a great deal of water and have always had problems with limescale and calcification.

To get rid of this problem, we have already used two different types of devices from other manufacturers whose systems work according to a design similar to yours. As these both failed, we had to take out both products.

When we saw how simple your system is, we were honestly fairly skeptical and even more so when we saw how your technician installed the product on our entry pipe in minutes with no tools. Still after only a few days we noticed a clear difference in the calcium levels. Where there were previously hard calcium deposits that had to be removed with cleaning fluids, now we saw just a light white film that could easily be removed. We also saw that shower heads and water pearling devices no longer showed signs of calcification.

We will, without a doubt, keep the Vulcan 5000 and attached is our check. Furthermore, I wish you great success in providing others and wish your company all the best.

Sincerely



Mitglied im  
Verband Physikalische Therapie,  
staatl. gepr. Masseur und med.  
Bademeister



**BAYERISCHER  
HOTEL-UND GASTSTÄTTEN  
VERBAND E.V.**

## Hotel Meridien N'Fis

Morocco

Hotel Méridien N'fis  
Avenue Mohamed VI,  
Marrakesh 40000,  
Morocco

[www.lemeridien.com](http://www.lemeridien.com)

*Le* MERIDIEN  
N'FIS

### Certificate of reference for the Vulcan Descaler

In order to remove and prevent scale and rust issues affecting our pool areas and various hydraulic installations, we have purchased and installed the Vulcan S25 unit from CWT International.

After receiving a very satisfactory result from the Vulcan S25, we plan to entrust the Vulcan Descaler range with any future scale or rust problems in the Le Meridien N'fis.



Hotel Méridien N'fis pool and spa area protected by Vulcan S25

Kind Regards,

A Moursil.  
Technical Director.



# Spring Lake Village - Retirement Home

USA



Spring Lake Village - Retirement Home

Santa Rosa, California

CWT  
 Distributor: Quest Green Solutions  
 Santa Rosa, California  
 USA

Location: Spring Lake Village  
 Santa Rosa, California  
 USA

Model: 2 x Vulcan S25

Installation area: Main water inlet - Health centre  
 Main water inlet - Building E



Vulcan S25



Vulcan S25 installed in Building E at the Health Center

## No9 Dacheng Road Hotel

China



### No 9 Dacheng Road Hotel

No.9, Dacheng Road, Fengtai District, Beijing, China

#### Installation details

**Model:**

Vulcan S100

**Installation Location:**

No 9 Dacheng Road Hotel  
Beijing, China

**Application Area:**

Hotel Bathing

**Installed by:**

Beifangxinhu



**Application:**

The No 9 Dacheng Road Hotel is a 375 room, 16 storeys high hotel located in centered Beijing, China. It is a hotel for tourism, leisure, and business.

A Vulcan S100 was installed on the hotel main hot water system, in order to remove and prevent scale build up in the heaters/boilers, which provide hot water throughout the entire hotel for bathing.



Vulcan S100 installed in the hotel in Beijing, China



Detecting the Vulcan impulse field

# Apartment Building

Japan

## Installation of Vulcan S25



Installation site: The roof of an apartment building in Tokyo. (Building built 20 years ago with 46 apartments)

Water supply system: Water tank on top of the roof

Piping diameter: 80mm

Model: Vulcan S25

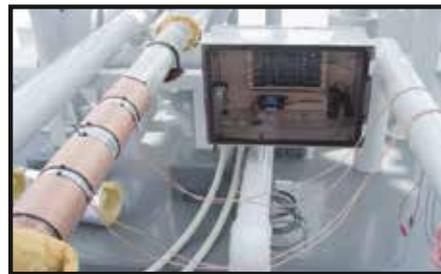
Water treatment capacity: 25 m<sup>3</sup>/ hour



Before Installation: The cover and the lagging material on the pipes are removed for installation



Cable windings complete



Impulse cables and the Vulcan S25



The piping with cable has now been recovered with the lagging material and cover. Installation of the Vulcan is now complete.

## Apartment Building

France



Sarthe Habitat

[www.sarthe-habitat.fr](http://www.sarthe-habitat.fr)

### Installation details

**Model:** Vulcan S25

**Location:** Sarthe Habitat  
58 Avenue Bollée  
72000 Le Mans  
France

**Installed by:** CWT Preval France



Vulcan S25 installed in on the heating system for 132 apartments

### Sarthe Habitat

Sarthe Habitat is responsible for the construction and management of housing developments for the elderly, disabled and disadvantaged youth. Each construction integrated into Sarthe Habitat has a strong focus on urban planning with compliance and commitment to sustainable development. In total, Sarthe Habitat manages 13,891 homes, 22 businesses and 43 apartment buildings.



Vulcan S25



Sarthe Habitat 132 apartment complex in France



CWT Preval France, 2 Rue de la Gare, 72170, Beaumont Sur Sarthe, France, [www.cwt-international.com](http://www.cwt-international.com)

## MeridianSpa Berlin

Germany

### Vulcan S250 Installation MeridianSpa in Berlin, Germany



**Location:**  
Meridian Spa,  
Berlin

**Installation:**  
CWT Germany

**Model:**  
Vulcan S250

**Application:**  
Pool and spa area



Pool and spa area protected by Vulcan S250



Vulcan S250 treating main water pipes for the Meridan Pool and Spa area

## Recreational Swimming Centre

France



### Installation details

**Model:** Vulcan S25

**Location:** Centre Nautique du Val de Morteau  
Le Clair  
25500 Les Fins  
France

**Installed by:** CWT Preval France



Swimming pool and water slide inside the Centre Nautique

### Centre Nautique du Val de Morteau

Is a sports and recreational facility for the whole family. Their facilities include a 5 lane 25m swimming pool, a 200 m<sup>2</sup> spa pool with a bubble bench, solarium, indoor water slide and a mushroom waterfall.



Vulcan S25 installed on the main water line



Vulcan S25 impulse cables



Vulcan S25 impulse cables



**Schools**  
**Educational Institutions**  
**Sporting Facilities**



## University of California Merced

USA

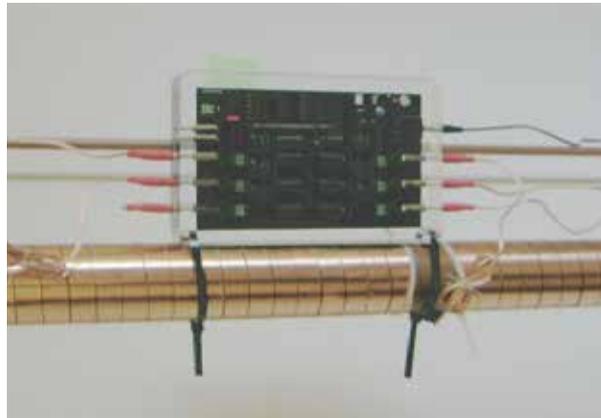


### University Of California Merced

5200 Lake Rd,  
Merced  
CA, 95340

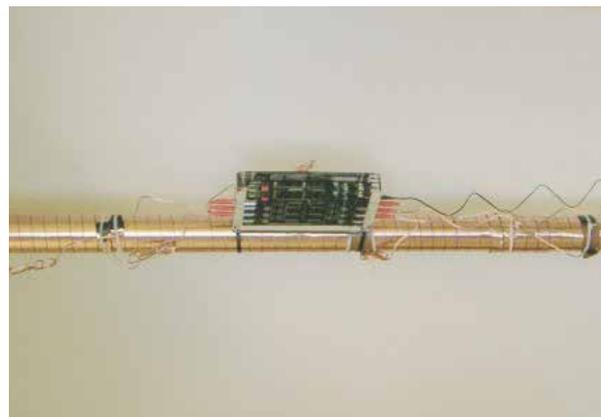
CWT  
Distributor: Quest Green Solutions  
P.O. Box 6662  
Santa Rosa  
California  
USA

Location: University Of California  
Merced, California



Model: Vulcan S100

Installation  
Area: Installation of the Vulcan  
S100 on the main cold  
water line



**UC MERCED**  
UNIVERSITY OF CALIFORNIA,

# University of California Davis - Bodega Marine Laboratory

USA

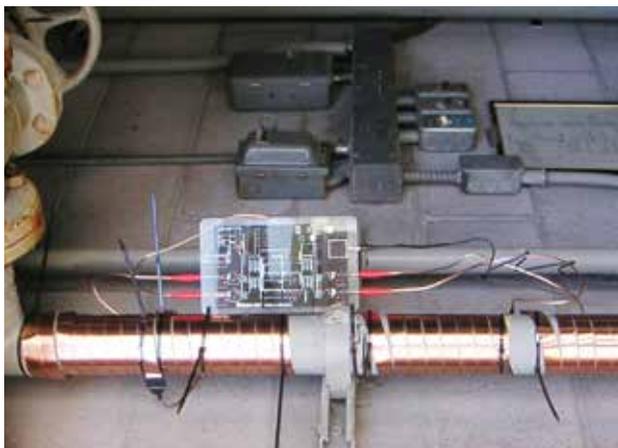


UCDAVIS Bodega Marine Laboratory  
 2099 Westside Rd,  
 Bodega Bay  
 CA 94923



Vulcan S10 installed on water main for Bodega housing dormitories

Model: Vulcan S10  
 Installation Area: Water main of the Bodega marine housing dormitories  
 Installed by: Quest Green Solutions



Vulcan S25 installed on cold water pipe for the Bodega marine laboratory

Model: Vulcan S25  
 Installation Area: Cold water pipe of the main Bodega Laboratory  
 Installed by: Quest Green Solutions

## Florida State University - Biomedical

USA



**Florida State University**  
**600 W. College Avenue**  
**Tallahassee**  
**FL 32306**

Dear Ackurilabs Team,

Please find below photos of the Vulcan Descaler installed in the Florida State University Biomedical Facility.

These pictures are of a stainless steel rack washer and conveyer steam washer, after the Vulcan units were installed on the entire Biomedical Research Building.

Regards,

The Florida State Bio-medical Team



Vulcan unit installed on water main



Stainless steel rack washer now completely scale free



Conveyer steam washer



## Irrigation for a Football Field

Saudi Arabia

### Irrigation water for the natural grass football fields



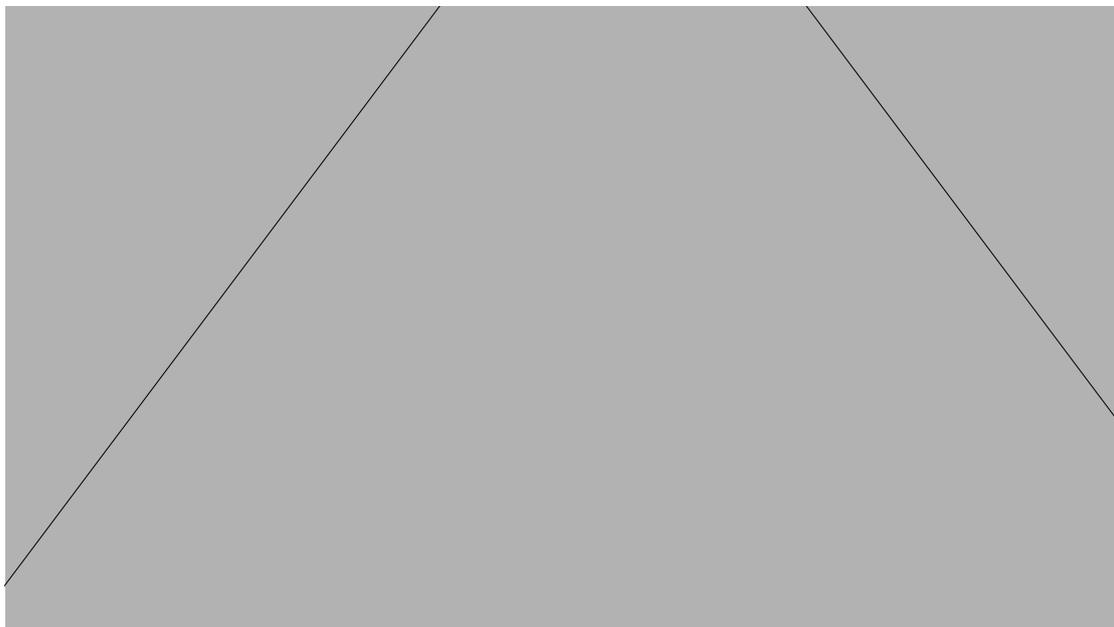
Dear Mr. Christiani,

Reference to the above mentioned subject, we have installed VULCAN S100. After a year, the result on irrigation water for the natural grass football fields was very satisfactory.

The company which is behind the maintenance of football fields feeling well, they have sent reports to the Saudi Government Sports Ministry they wrote on their reports that there's good result on using this devices.

for your information and references.

Engr. Ziad Sabbagh



## Ice Land

USA



### Installation details

Model:	Vulcan S25
Location:	Ice Land, New Jersey
Installation area:	Treats water used for ice production
Installed by:	Princeton Management Advisory and Consulting LLC



Vulcan S25 installed at Ice Land, New Jersey



## Hartwall Ice Hockey Arena

Finland



HARTWALL AREENA

Helsinki Halli Oy

Areenakuja 1, FIN-00240 Helsinki

Hartwall - Areena  
Areenankuja 1  
FI-00240 Helsinki,  
Finland

CWT-Christiani Wassertechnik GmbH  
Herr Rolf Christiani  
Köpenicker Str. 154  
10997 Berlin



Dear Sir

We have been using CWT-Christiani Wassertechnik GmbH Vulcan water treatment equipment in our ice hockey hall Hartwall Arena.

We are using many sizes of Vulcan for several heating/cooling equipment in our water system:

- Vulcan 5000
- Vulcan S 25
- Vulcan S 100.

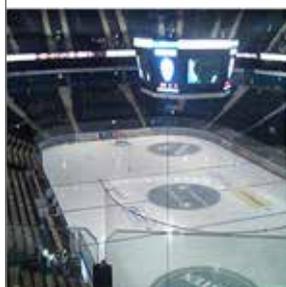
We have realibility with these systems and have been most satisfied in using them.

Vulcan is a high-quality and great solution to different kind of premises.

Yours sincerely,

Hartwall - Areena

  
Jari Väinänen



## RM Fitness Centre

Spain

### RM FITNESS CENTRE

VULCAN ESPAÑA  
TERRASSA-BARCELONA

To Vulcan Spain,

Since late 2007, after we installed the Vulcan S25 in our facilities, according to our customers and maintenance managers, we have significantly noticed the effectiveness of Vulcan in our facilities.

We have noticed the descaling of the pipes, reduced scale in the boilers/appliances and a significant saving in chemicals and electricity costs.

The skin and hair feels softer, and we have reduced the cost of cleaning products.

Electricity costs are much lower because Vulcan annual consumption is very low.

We removed the conventional softener we had since the opening of the gym, thus saving expenses of salt and water.

Therefore we want to congratulate Vulcan Spain for the right solution that you have brought to us to solve the problem of lime in the water.

Ernesto Betancourt.



## City of Terrassa Sports Centre

Spain



Vulcan Spain  
C/ Ample, 45 Bajos  
08225 Terraasa

Dear Mr. Mio,

We have installed the Vulcan descaling device at the Salobreña sports centre in order to combat the various limescale problems and to ensure the preservation of this sporting facility. This facility has a 25m long swimming pool, as well as a full gymnasium with all types of weight machines, treadmills, ellipticals and stair masters.

I am happy to report that we have seen excellent results after the Vulcan installation, and we are sincerely happy for the great service provided by Vulcan Spain.

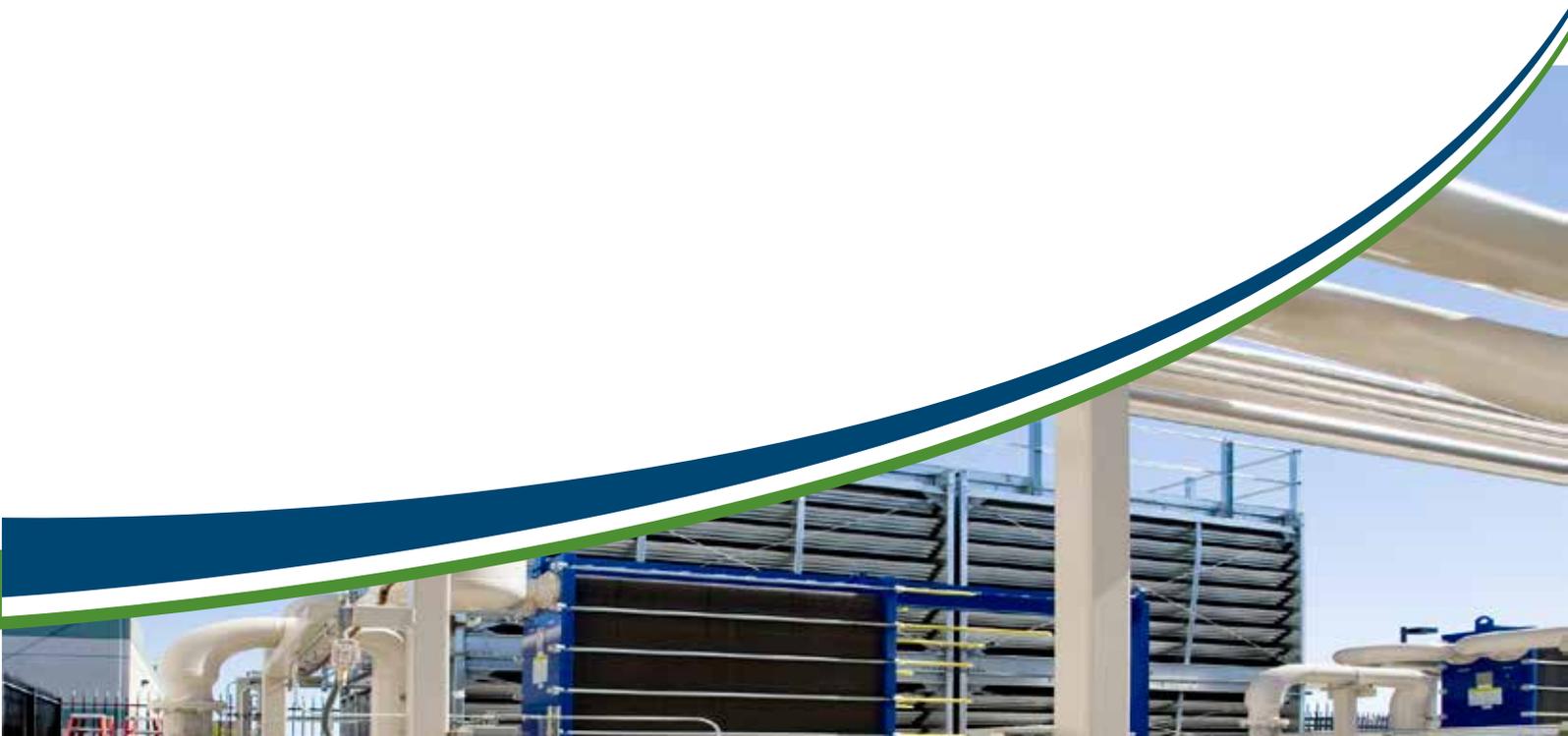
We are now studying the feasibility of installing the Vulcan Descaler at the other council building and facilities in Terrassa.

Thanks

Miguel Castaño Gonzaley  
Manager of Tourism and Sports in the City of Salobreña



**Cooling Towers**  
**Chillers**  
**Heat Exchangers**



# Commercial Cold Storage

USA

**Commercial  
Cold  
Storage**



1011 S 1st St,  
Mt Vernon  
WA 98273  
USA

IWTNA  
2607 Bridgeport Way West  
Suite 1J University Place  
WA 98466

Dear IWTNA,

Please find below the installation photos of the Vulcan S100 installed on the main line connected to 3 cooling towers.

Regards,

The Mt.Vernon Cold Storage Team

**[www.commercialcold.com](http://www.commercialcold.com)**



Vulcan S100 installed on cooling towers



Vulcan S100 installed outside



"...serving the global food industry."

# Florida State University - Engineering

USA

<p><b>Florida State University</b>  <b>600 W. College Avenue</b>  <b>Tallahassee</b>  <b>FL 32306</b></p>		
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To the Ackuritlabs team,

Please find below photos of the Vulcan Descaler installed in the Florida State University College of Engineering.

These pictures show 2 x Vulcan S100 units protecting the double chiller and pumps in the FAMU/FSU College of Engineering.

Regards,

The Florida State Engineering Team



Vulcan S100 units installed on the double chiller



Vulcan S100 units installed on the double chiller



Vulcan units protecting chiller pumps from scale and rust

## Neptune Foods Restaurant

USA



**Vulcan installed at:**

Neptune Foods - Vernon  
Seafood processing  
90058 Vernon  
California, USA

Arne Vestad - International Water Treatment North America

Dear CWT Team,

This cooling tower is one of three protected by the Vulcan S25 units in this location. The building is one of 47 buildings owned by Neptune Foods in Vernon LA, and this particular building does mainly seafood processing and packaging for consumers.

This picture was taken after 4 months the installation of the Vulcan S25. The tower was dirty/not cleaned before the Vulcan was installed.

Since the Vulcan installation, the cooling towers have been scale free and there has been no need for any chemical treatment.



Clean cooling tower after using Vulcan

Best Regards,  
Arne Vestad

## Water Wise

USA



Dick Van Voorhis  
Salt-Free Water Systems  
1429 Casco Bay Cir  
Cicero IN 46034

**RE: Vulcan Descaler as an alternative to chemical based cooling tower treatments**

Dear Dick.

For the past two years, we have selected several of our existing customers and offered them the opportunity to have us install the Vulcan Non-Chemical Unit on their cooling towers, for the purpose of evaluating corrosion, scale and bacteria rates versus a traditional chemical treatment program.

We have installed 5 x Vulcan S25 & 2 x S10 units all in the upper New York State area.

Based on standard water test analysis, including Corrosion Coupon Testing and regular Bacteria Dip Slide results, we have concluded that the Vulcan Non Chemical System has been able to provide similar results, to those achieved using a chemical based treatment program.

Regards,

Michael Bromley  
President  
Water Wise of America Inc.  
Rochester NY 14624

[www.waterwiseofamerica.com](http://www.waterwiseofamerica.com)

## Chillers in a Cooling Tower

USA

INTERNATIONAL WATER TREATMENT  
N O R T H A M E R I C A  
*Clean, Green, Affordable*

### Vulcan installed in a Chiller

Dear CWT Team,

Here are two pictures from a Chiller opened for a routine cleaning, but nothing to clean after two years with Vulcan treatment.



No scale formation after using Vulcan



This Chiller is connected to a Cooling Tower which is exposed to lots of air borne contamination from surrounding farms.

Best Regards

Arne Vestad  
[www.IWTNA.com](http://www.IWTNA.com)

# Spokane Public Schools Washington

USA



## Vulcan installed in Spokane Public Schools

Dear CWT Team,

Spokane schools now have 6 Vulcan units installed.

One of the first Vulcan units is on a small cooling tower and this stays absolutely clean during the season. The tower was full of scale when we started and after 4 weeks, scale started to fall off in big chunks and now it is completely scale free.



Installation of Vulcan Descaler for the entire buildings water supply in the Roosevelt school

Our first installation in Spokane schools was in Shaw Middle School, 50 years old building and with rusty/dirty looking water.

This was installed before the school started in the fall. After Christmas this year, the water is always clean and the janitor does not have to flush the piping anymore.

Have a great day.

Arne Vestad

IWTNA

### Installation locations



#### Roosevelt Elementary School

333 West 14th Ave  
Spokane, WA 99204-3627  
USA



#### Shaw Middle School

4106 N. Cook St.  
Spokane, WA 99207  
USA

## VacMet Coating & Engraving Service

USA



Coating & Engraving Service

Coating of metals with plastic or resins

IWTNA  
Arne Vestad  
2607 Bridgeport Way West  
Suite 1J University Place  
WA 98466

### **Vulcan anti-scale system**

Dear Mr. Vestad,

I have noticed a definite improvement in the operation of our boilers. Typically, we would have several cooling coil plug ups during the hot weather season (a greatly extended season this year) and since the installation of the Vulcan, we have had zero plug ups and that translates into the saving of many hours of down time.

Based on that saving alone, the Vulcan has already paid for itself.

An additional benefit has been in the greatly reduced amount of cooling tower maintenance. The calcium buildup has been miniscule and the little bit that has accumulated can be easily washed away with a garden hose and nozzle.

I have also noticed a huge reduction in the iron stains in the bathroom fixtures here at the factory as well as at home where I installed the second unit. At home, I eliminated my water softener that was running on potassium due to the ancient iron pipes that run all through the house and barn.

The water seems to feel and react just as well with the Vulcan as it did with the softener and I no longer need to buy the expensive potassium and break my back lugging around the heavy bags to reload the water softener. I don't mean to sound like a commercial for the unit, but those are the honest facts and observations.

Please feel free to stop by the next time you are in the area.

Kindest regards,

Chuck Nelson  
VacMet Inc. in California, USA  
[www.vacmet.com](http://www.vacmet.com)

## Dynamit Nobel

Germany

# Dynamit Nobel

AKTIENGESELLSCHAFT

WERK LÜLSDORF

DYNAMIT NOBEL AG, Werk Lültdorf, 5216 Niederkassel

Firma  
Christiani Wassertechnik GmbH  
Diepenbenden 25  
5100 Aachen

Water treatment device

Dear CWT-team

Currently we have five devices from the Vulcan range in use.

Because of the high degree of hardness of our cooling tower water, we had to decalcify every few months. After we used the devices, the scale on the heat exchange pipes was drastically reduced. Thus the lifetime of these devices is getting longer.

Kind regards

DYNAMIT NOBEL AG  
Werk Lültdorf  
Technical Department


## Energetika Ravne d.o.o Heat Exchanger

Slovenia

**ENERGETIKA RAVNE, d.o.o.**

Ravne RP  
12.00/1029/RJ

**SUBJECT: INSPECTION OF TUBE HEAT EXCHANGER (2X) UHP FURNACE,  
OPEN SYSTEM 40/30 °C**

Upon the agreement with Mr Petovar, we have concluded to inspect both tube heat exchangers on the secondary part of the UHP furnace.  
The front and rear covers of both exchangers shall be disassembled.

**PRESENT AT INSPECTION:**

Petovar – SŽ Metal Ravne, d.o.o. JUH OTO  
Oderlap, Vučko, Potočnik, Jamšek, Zapušek – Energetika Ravne, d.o.o.

**ESTABLISHMENTS:**

The inspected tubes were clean; there were no signs of lime scale accumulation.

The device for electronic softening is functioning well.

**CONCLUSION:**

We suggest that the device is purchased.



After Vulkan installation

Control of honey comb fill of cooling tower

## Vulcan Effects on Cooling Towers

USA

### Data and Observations of the Effects of the Vulcan Electronic Descaler on Cooling Towers

**Installation site:**

The unit was installed on the 10 inch diameter line that feeds twin cooling towers (CT-1 and CT-2) at the FAMU/FSU College of Engineering.

**Model installed:**

Vulcan S250

**Objectives:**

The objectives are to prevent scale buildup on the cooling towers, remove the existing scale, eliminate the need for chemicals or time-consuming cleaning procedures, and to reduce energy costs.

**History:**

The maintenance for these cooling towers previously involved continuous injection of descaling chemical cleansers. The use of these cleansers was discontinued over a year prior to the installation of the Vulcan. In that time, the cooling tower flutes became encrusted with both scale and biofilm. Throughout the time period described below, there were no cleaning procedures in place with these cooling towers besides the treatment provided by the Vulcan.

**Observations over time after the Vulcan Installation:**

Between the time of the installation on July 16th and examination on August 1st, the green biofilm had begun to recede and gradually disappear. The next visit was about 3 weeks after the installation, on August 9th. At that point, the green biofilm had been further reduced and the scale deposits had begun to separate from the flutes in coin-sized flakes.

By August 20th, about a month after installation, the green biofilm had almost completely disappeared from the surfaces in contact with the Vulcan-treated water. The flakes of scale previously observed had fallen off in most places. The cooling tower flute surface area covered with scale deposits had been decreased by over 60%.

We are very optimistic about continued improvement with this application. In addition to these observations, water quality measurements were also obtained from each cooling tower and are summarized in the following charts.

# Vulcan Effects on Cooling Towers

USA

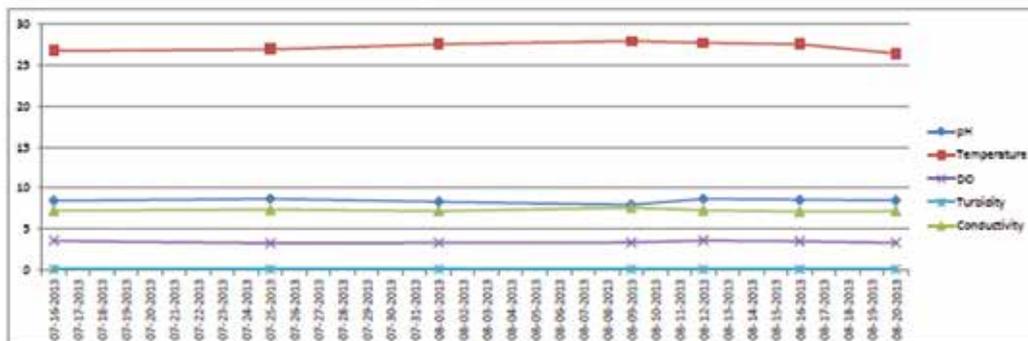
## Data and Observations of the Effects of the Vulcan Electronic Descaler on Cooling Towers

The Vulcan does not change the water quality beyond its affect on its propensity to cause scale buildup. As illustrated below, the pH, conductivity, dissolved oxygen level, and turbidity remained relatively constant during observation from before the installation to over a month after. Temperature is included, because of its affect on the other measurements and seems to correlate with the slight fluctuations observed.

### Cooling Tower 1 Basin

	Date	pH (SU)	Temperature (°C)	Conductivity (umhos/cm) *	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Before Vulcan →	07-16-2013	8.46	26.7	7.22	3.56	0.1
After Vulcan →	07-25-2013	8.67	26.9	7.35	3.26	0.1
	08-01-2013	8.32	27.5	7.2	3.33	0.1
	08-09-2013	7.97	27.9	7.59	3.36	0.1
	08-12-2013	8.67	27.7	7.29	3.6	0.1
	08-16-2013	8.56	27.5	7.16	3.52	0.1
	08-20-2013	8.47	26.4	7.2	3.31	0.1

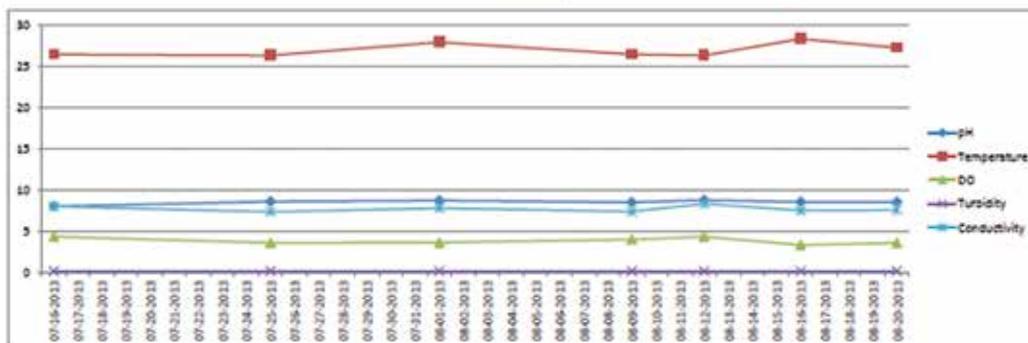
\* divided by 100 to fit within the chart scale



### Cooling Tower 2 Basin

	Date	pH (SU)	Temperature (°C)	Conductivity (umhos/cm) *	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Before Vulcan →	07-16-2013	7.97	26.4	7.96	4.3	0.1
After Vulcan →	07-25-2013	8.56	26.3	7.29	3.52	0.1
	08-01-2013	8.67	27.9	7.76	3.56	0.1
	08-09-2013	8.44	26.4	7.35	3.96	0.1
	08-12-2013	8.73	26.3	8.28	4.3	0.1
	08-16-2013	8.5	28.3	7.46	3.26	0.1
	08-20-2013	8.52	27.2	7.53	3.52	0.1

\* divided by 100 to fit within the chart scale



## Vulcan Effects on Cooling Towers

USA

### Data and Observations of the Effects of the Vulcan Electronic Descaler on Cooling Towers



Vulcan S250 installed on a 10 inch diameter line that feeds twin cooling towers (CT-1 and CT-2)



This photo was taken of the inside of CT-1.

It illustrates clean filaments that are in constant contact with Vulcan-treated water and a few dry (untreated) areas that still have some remaining green biofilm.



The photographs above were taken of CT-1 about 3 weeks after the Vulcan was installed.



These photos were taken of CT-1 after about 6 weeks.



## Miscellaneous



# IFCO Reusable Plastic Containers

USA



Reusable plastic containers for transporting fresh produce



**Vulcan installed at:**

IFCO - Chicago  
 Pallet Recycling  
 60608 Chicago  
 Illinois, USA



the produce cleaning system at IFCO in Chicago. IFCO is an...  
 in 26 countries. The washer is manufactured in Italy by...  
 the pipe is stainless steel.

m in factory had very short pipe lengths. Therefore, we had...  
 e 2 times. After 2 weeks we have had confirmation from the...  
 thing you said it would do!

After confirming the effectiveness of the Vulcan, we have installed S100 units on all 5 washing stations within the Chicago IFCO plant.



Vulcan S100 units installed on the produce cleaning system



Vulcan Impulse Cables double wrapped on water pipe



Vulcan S100 unit installed on the produce cleaning system



Containers coming out of the produce cleaning system

## Philipp Best Plumbing

Australia

### Philipp Best Plumbing

All Your Commercial & Industrial Plumbing Needs

Plumbers & Gasfitters - Bunbury, WA

PO Box 1733, Bunbury WA 6231

Southern Water Technology  
6 Teede St  
PO Box 553  
Bunbury WA 6231  
Australia

#### CWT - Physical water treatment system

I've been in the plumbing industry for 32 years and currently have five staff working for me at Phillip Best Plumbing in Western Australia. Since becoming available in Australia, we've purchased a number of CWT water systems to stop calcium deposits building up in a range of different piping systems. These deposits create many unwanted effects such as clogged pipes and irreversible damage to pipes and other plumbing parts.

I found the CWT water treatments to be very effective in high temperature heating systems such as commercial combustion ovens in restaurants and even in a very high temperature heating system at a local abattoir. There are also huge time savings associated with CWT water systems. Installation time is cut by at least 90% when compared to similar units. The units, which are made in Germany, are also at least 50% cheaper than other units currently on the market.

The units, which allow scale particles to be washed away, are not only proving to be successful in commercial and industrial applications, but in private homes with scale and rust problems. I installed a CWT system to protect the hydraulic heating system, which lies under the cement slab of our home.

CWT has been a great cost saving unit initiative that will protect your piping system from ongoing scale and rust problems.

Your Phillip Best Plumbing Team



## Clerfond Automobiles - Car Wash

France



### Installation details

**Model:** Vulcan S25

**Location:** Clerfond Automobiles  
Car Wash  
Av. Rhin et Danube  
72200 La Flèche  
France

**Installed by:** CWT Preval France



Car wash located at Clerfond Automobiles

### Clerfond Automobiles - Car Wash

The car wash located at Clerfond Automobiles suffered immensely from lime scale encrustations. After the Vulcan installation, scale deposits were no longer found on the pumps, filters, nozzles and brushes. Detergent use was reduced dramatically, and now the recently washed automobiles show no signs of scale spotting.



Vulcan S25

## Paris Country Club - Golf Course

France



# PARIS COUNTRY CLUB

**Vulcan installed at:**

Paris Country Club  
59 Rue Jean-Baptiste Pigalle  
75009 Paris  
France

**Installed by:**

CWT Preval France  
[www.cwt-international.com](http://www.cwt-international.com)

**Model:**

Vulcan S100

**The Paris Country Club**

The course is located just 10 minutes from Paris in the heart of the Saint-Cloud race course.

The Paris Country Club has a 9 hole golf course, driving range, 3 separate swimming pools, tennis courts, full gym, cinema, spa and massage area as well as a full restaurant.

**Application:**

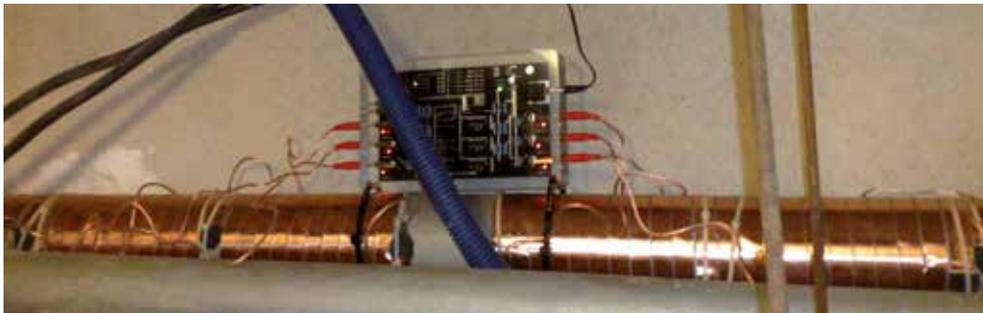
The Vulcan S100 unit was installed on the water main for the Clubhouse, to protect the bathrooms and kitchen areas from limescale deposits



Vulcan S100



Aerial view of the Paris Country Club



Installation of the Vulcan S100 unit in the Paris Country Club

# AMC Measuring and Control Devices

Algeria




المؤسسة الوطنية لأجهزة القياس و المراقبة  
 ENTREPRISE NATIONALE DES APPAREILS DE MESURE ET DE CONTROLE  
 (S.P.A. AU CAPITAL SOCIAL DE 1.462.825.000 DA)  
 SOCIÉTÉ DU GROUPE SOUFI GA7



B.P. 02 - Route de Batna - EL-EULMA - Wilaya de Sétif

**Location :** Algeria  
**Application:** Production of water meters and electricity meters  
**Department :** Infrastructure



Vulcan was installed by:  
 Eurl FCGBI (ISSIAKHEM)

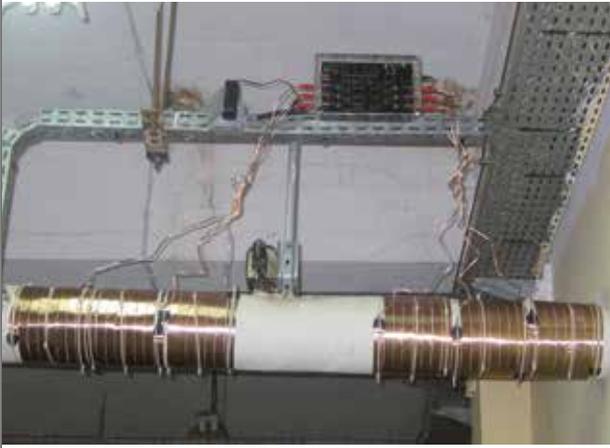
## CERTIFICATE OF GOOD PERFORMANCE

We hereby ensure great satisfaction after installing the physical water treatment system Vulcan S100 and Vulcan S250 with its Impulse-Technology.

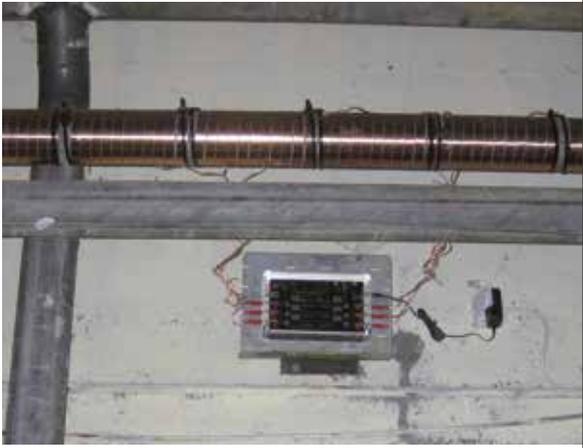
The factory where Vulcan is installed produces electricity meters and water meters.

**EURL FCGBI**  
 The Head of Department  
 Infrastructure





Physical water treatment with Vulcan S100 and Vulcan S250.



The installation of Vulcan S100 in a water meter and electricity meter production.

## Mondi Packaging Factory

Czech Republic



Mondi Štětí a.s.  
Litoměřická 272  
CZ - 411 08, Štětí  
[www.mondigroup.com](http://www.mondigroup.com)

### Vulcan S100 Installation

To the Kostečka Team,

The Vulcan device is installed on lime oven, which usually required extensive scale cleaning every 3 months. It has now been 4 months since installation of the Vulcan S100, and the scale problem have reduced significantly.

Now the pipes and production equipment require much less cleaning. We are very satisfied with the performance of the Vulcan S100 Unit.

Best Regards,  
The Mondi Group



Mondi Štětí a.s manufacturing plant in the Czech Republic



Deposit removed from pipe after Vulcan installation



Vulcan S100



Installation of Vulcan S100 on lime kiln



## HANS KREMPL Residential Technologies

Germany



HANS KREMPL . HAUSTECHNIK GMBH

Christiani Wasser Technik GmbH  
Herr Christiani  
Berlin, Germany

Koblenz, Germany

Dear Sir,

We have been selling your Vulcan 5000 water treatment system for over 10 years. In this time we have successfully sold more than 1000 sets of equipment. We have consistently received positive feedback from our customers in view of the effectiveness of the system - patches of limescale which could previously only be removed by chemical detergents can now simply be wiped away with a cloth. What is more, the use of the system has notably reduced the calcification in the heating of electrical equipment (e.g. washing machines, dishwashers, kettles etc).

We wish you and your company further success and in the above mentioned matter would like to thank you for a successful collaboration.

Yours Sincerely,

- Hans Krempel jun. -

## Średzki Water Park

Poland



### Średzki Water Park in Środa Śląska, Poland

The water treatment system Vulcan S25 protects the entire water supply network and all the heating devices of the pools of the Średzki Water Park.

The costs of normal treatment products with such a water flow of 25 m<sup>3</sup>/h would mean operating costs at 3.900 € per month (assuming 24 working per hour)!  
The cost of running the Vulcan S25 device is approx. 1,50 € per month.



## Avignon Ceramic Core Production

France



### Installation details

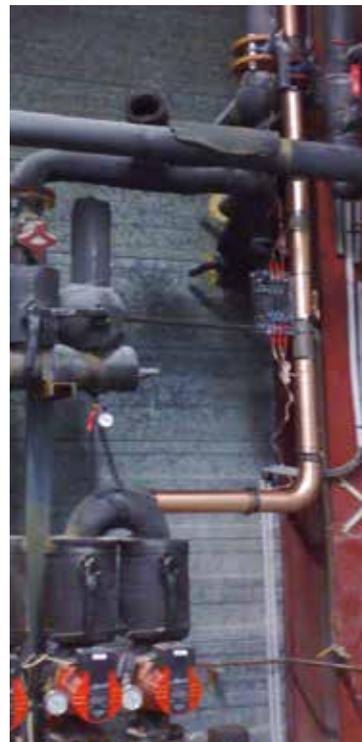
**Model:** Vulcan S25  
Vulcan S100

**Location:** Route de Noirlac  
18200 Bruère-Allichamps  
France

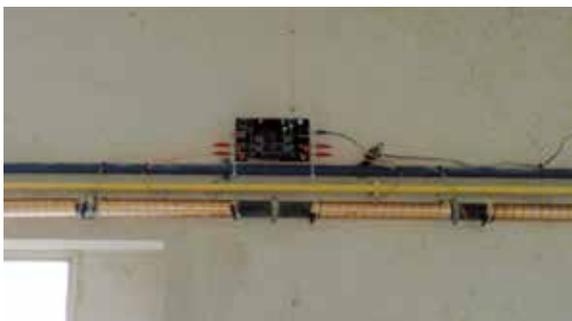
**Installed by:** CWT Preval France

### Avignon Ceramic Factory

Avignon Ceramic is an independent ceramic cores manufacturer for investment casting. With nearly 20 years of experience in design and production of ceramic cores, Avignon Ceramic offers a wide range of products, of various sizes and complexity levels from millimetres to nearly 1 meter, and from very simple to the most complex shapes.



Vulcan S100 installed in Avignon Ceramic



Vulcan S25 installed in Avignon Ceramic



Avignon Ceramic production line

## Alcoa Aluminium Factory

France



### Vulcan installed at:

ALCOA Aliminum Factory  
in France

### Installed by:

CWT Preval France

### Models Installed:

1 x Vulcan S10

2 x Vulcan S25

1 x Vulcan S100

### ALCOA Aluminum Factory

Alcoa is the world's leading producer of primary and fabricated aluminum, as well as the world's largest miner of bauxite and refiner of alumina.

Their facilities in France produce technologically advanced products that include aluminum sheets and plates, aluminum architectural products and systems, fasteners and fastener installation systems, structural castings, turbine engine components and aircraft frame components. Alcoa employs approximately 61.000 people in 30 countries worldwide.



Vulcan S25 installed in the Alcoa Aliminum factory in France



Vulcan S10 installed in the Alcoa Aliminum factory in France



Vulcan S25 installed in the Alcoa Aliminum factory in France



Vulcan S100 installed in the Alcoa Aliminum factory in France

## Pilbara Commercial Laundry Services

Australia

### Pilbara Commercial Laundry Services

Unit 5 9 Byass St,  
South Hedland,  
WA 6722  
Australia



Testimonial with Jamie Cavey

Hi, my name is Jamie Cavey and I operate the only commercial laundry in Pilbara - The Pilbara Commercial Laundry Services. We are a mid-size operation that specializes in the laundering of hotel linen, mine site linen and work clothes.

Living in a hard water area like Pilbara means we have ongoing problems with calcium build up in our piping and air-conditioning systems. The calcium sticks to the heating elements and the whole internal section of the hot water system becomes completely clogged with calcium.

Twelve months ago we installed a German made CWT Water Treatment System from the team at Southern's Water Technology in Bunbury and immediately we noticed a significant reduction in the build up of calcium.

I believe we have quadrupled the life span of our evaporated air conditioner and we haven't had to replace our hot water system for more three years.

Without the CWT Water Treatment System we would be replacing our hot water system every two years at a cost of more than \$10,000.

**There is no doubt the CWT Water Treatment System will prolong the life span of your piping and hot water systems and evaporative air-conditioning units.**

After the treatment, the adhesiveness of the crystals is reduced so that scale is unable to form in the pipes.

**You can actually see the calcium slowly breaking down through the drainage system.**

Sincerely,

Jamie Cavey

## St. Olav's Church Los Angeles

USA



### Vulcan 3000 electronic anti-scale system

This is a statement from The Norwegian Seamen's Church in Los Angeles / San Pedro after we have used the Vulcan 3000 anti-scale system for a few months. We replaced a water softener system which used salt and special filtering system, as it was very expensive to maintain and it covered only part of the water system.

We decided to replace the water softener with the Vulcan Descaler 3000 unit. The result now is amazing, the clogging of the shower nozzles is gone, and the kitchen faucet nozzles are spraying evenly and our commercial grade dishwasher is cleaner and works better. We use a lot less detergent when doing laundry as the Vulcan 3000 makes the detergent work so much better.

Best regards

Knut Selle  
Facility Manager  
St Olav's Church Inc  
Norwegian Church in Los Angeles / San Pedro

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St. Olav's Church inc. P.O.Box 1621  
1035 South Beacon Street  
San Pedro, CA 90733-1621. USA

## Exhibition Center Cologne

Germany



c/o Bayer Gastronomie GmbH · Deutz-Mülheimer Straße 30 · 50679 Köln  
Deutschland

Catering managed by  
 Bayer Gastronomie

**Christiani Wassertechnik GmbH**  
**Heinrich-Heinstr. 15**  
**52249 Eschweiler**

### Vulcan 3000 Service Report

Dear Sir,

A few months ago we installed your Vulcan 3000 water treatment system in our catering services at the Cologne trade fair. In recent years we have had problems in particular with the coffee machines and dishwashers due to the hard water in Cologne.

The machines had to be maintained frequently and the cleaning costs of the kitchens were very high.

After the installation of your water treatment system in our bistros I noticed a clear improvement of the situation. The limescale deposits are now much easier to remove thus easing the workload of the staff. Less detergents are needed and I am altogether extremely satisfied with your device.

Unfortunately I am unable to give a long-term conclusion over the scale reduction at this point in time as it is not possible to see inside the pipes. I am convinced however by the effects visible outside the pipes and can therefore fully recommend Vulcan.

Yours Sincerely,

Gabor Ernoehazai

Technical Manager Cologne trade fair

Koelnmesse Service GmbH  
Messeplatz 1  
50679 Köln  
Deutschland

## Garden Shop - Agriculture

Greece



Dimitrios Vasileiadis  
Garden shop  
Papav-Vasileiadis-Loizidou OE.  
Aerodromiou Sedes str & Aerodromiou Makedonia str.  
570 01Thermi-Thessaloniki  
Greece

Christiani Wassertechnik GmbH  
Köpenicker Str. 154  
10997 Berlin  
Germany

Dear CWT,

I am a professional cultivator of decorative plants and trees for more than 30 years. I have always had hard water quality problems. This water, I irrigate with it, comes from a bore. This water is brackish, which means of course, it is very bad for the plants. Actually, I have been burning my plants all these years because of large amounts of calcium and magnesium.

I also have to emphasize on the fact that all these years the leaves of the plants had a white colour and not the well known green colour. That is of course because of too much salt of the water.

Installing the Vulkan S 25 device, I found out that there are not any more white sedimentation on the leaves and soil. Most of all I realize that there is a big improvement in the growth of my plants. I also found out that there is a better and quicker foam creation. Wherever we want to wash our hands or even clothes etc.

Finally, I must say that I really found the solution to my problem, which has been bothering me for all these years, using the Vulkan device.

I really have to thank you from the bottom of my heart.

  
Δημήτριος Βασιλειάδης



Without treatment



With Vulkan treatment

## Riverview Hospital

USA



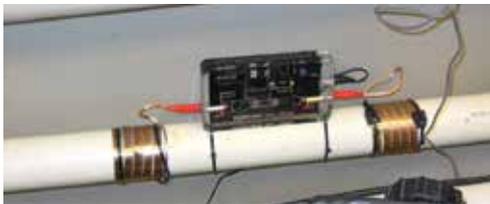
### Installation details

Model: Vulcan 5000  
Vulcan S10

Location: Riverview Hospital  
Noblesville, Indiana

Installation area: Swimming Pool

Installed by: Salt-Free Water Systems



Vulcan 5000 on main pool skimmer line



Vulcan S10 on main pool line



Swimming pool chlorinator in service 30 days before installing Vulcan units



Swimming pool chlorinator in service 30 days after installing Vulcan units

# Gegenbauer Health Care Services

Germany



Gegenbauer Health Care Services GmbH . c/o St. Joseph Krankenhaus.  
Bäumerplan 24, 12101 Berlin

Firma  
Christiani Wassertechnik GmbH  
Charlottenstraße 18

10117 Berlin

## Gegenbauer Health Care Services GmbH

c/o St. Joseph Krankenhaus  
Bäumberplan 24  
12101 Berlin

**Ihr Ansprechpartner**  
John Behrens  
Gegenbauer Health Care Services GmbH  
im St. Joseph Krankenhaus  
Bäumberplan 24  
12101 Berlin

### Vulcan S 250

Dear Mr. Christiani

we are a facility management company responsible for the maintenance and repairs inside the St Joseph Hospital in Berlin. Due to the hard water in Berlin, we used to have very bad problems with scale incrustations on the sanitary equipment. The maintenance and cleaning of the 2,500 showers and bathrooms alone was at a very high cost.

We have had the Vulcan S 250 installed inside the hospital now for a couple of months. We can identify a considerable benefit of the unit installed. We can barely see any scale deposits on the shower heads any more. This saves manpower and costs associated with exchanging sanitary equipment.

We can honestly recommend the unit installed by CWT GmbH.

Regards,

John Behrens  
Service Manager

Geschäftsführer:  
Hilger Reitzel  
Hilmar Gebhardt  
Wolfgang Wegener

B  
P  
A  
HRH 57364

## Evangelic Hospital Bergisch Gladbach

Germany

### EVANGELISCHES KRANKENHAUS BERGISCH GLADBACH

GEMEINNÜTZIGE GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG  
- AKADEMISCHES LEHRKRANKENHAUS -

Firma  
CALTRON Wasseraufbereitungs GmbH  
Heinrich-Hoerle-Str. 2  
Postfach 650150

5000 Köln 60

Dear Sir or Madam,

In December we installed a water treatment system in our senior citizens residence. The system has been running for six months by now and we are very pleased with the results.

We have a total of 478 water outlets in the building (289 water taps, 97 toilets, 92 showers). When checking the water tap outlets and showers we no longer find the typical scale build up or blockages. We have an indoor swimming pool which we use for all medical therapies. In this area we are also fully content with the effect of the water treatment.

For facilities for elderly people like ours it is inevitable to use water treatment that functions without chemicals or additional salt. We face an annual water consumption of 12.000 cubic meters (m<sup>3</sup>) [equals approx. 75478 gallons US] where a chemical system would cause tremendous costs and maintenance work for us. Compared to that, the annual costs of the water treatment system - which has been working without any malfunction and functions without any maintenance work - sum up to 50 DM [approx. 27 USD].

Sincerely yours,



BR Klein  
Managing director



A. Dietz  
Facility manager

## Ralons Lavandería Laundry Services

Spain



Dear Sirs,

After multiple problems with scale build-up in our irons and laundry equipment we decided to try and solve this situation. After much research, we finally found the solution we were looking for. We chose the innovative line of water treatment, Vulcan. The Vulcan S25 unit was installed.

Up until now, the results obtained have been entirely satisfactory; not only because the scale does not stick to surfaces anymore, but also because of the raised quality of the laundry which has a less-abrasive effect on the clothes. This has helped increase our service quality and customer satisfaction.

For the above reasons, we certify the complete effectiveness of the Vulcan S25 device installed in our company.

Sincerely,

**LAS PAMAS**  
C/ Puerto Rico, 2 Pta. 3 – 2º Ofic. 3  
35010 – Las Palmas de Gran Canaria  
Telf.: 902 226 047 • Fax: 928 226 008

**TENERIFE**  
Subida a El Mayorazgo, 16  
38009 – Santa Cruz de Tenerife  
Telf.: 922 236 030 • Fax: 922 211 048




**Esther Meca Cervera**  
Jefa Dpto. Sistema Integrado de Gestión  
Calidad, Medio Ambiente, PRL y Organización  
RALONS LAVANDERÍA, S.L.  
GRUPO RALONS

Reg. Merc. de Las Palmas de G.C.  
Folio 169 Tomo 1915  
Hoja GC-41466 Inscripción 1ª  
CIF: B-76014564

1 de 1  
[www.gruporalons.com](http://www.gruporalons.com)



## Water Supply for the City of Vallirana

Spain



AIGÜES DE VALLIRANA  
Bloc Tarragona, baixos  
08759 - VALLIRANA  
[www.vallirana.net](http://www.vallirana.net)

To Vulcan Spain team,

With this letter we confirm that Aigües de Vallirana, a company dedicated to provide water and the care of it to the village of Vallirana - recognizes the excellent performance of Vulcan 5000, the electronic anti-scale system.

As you know, about a year ago we bought and installed this system on the water pipe from the well water, with 63mm of diameter and 500m. of length. Typically, we would often have to intervene here and clean the scale from the pipe and filters. But after the Vulcan installation, this has not been necessary.

With the long-term efficiency and lack of maintenance needed with the Vulcan unit, we are very happy with this product.

Kind regards,

Fdo. José Comoy Mat  
Manager

## Water Supply for the Area of Anoia

Spain



AIGVA·DE·RIGAT·S·A

AIGVA DE RIGAT S.A  
C/ Comarca, 47  
08700 Igualada

[www.aiguaderigat.cat](http://www.aiguaderigat.cat)

To the Vulcan Spain Team,

Rigat is a company related to the operation of the water cycle in the region of Anoia since 1921. For more than 80 years, we have shared the same commitment and responsibility to ensure at all times the water supply is of the highest quality with minimal environmental impact.

We installed several Vulcan units just before the water meters, which were always filled with calcium and often become clogged. Because of these problems, we would have to change them frequently.

In the batteries where we installed the Vulcan S100 and S500, we always experienced the same results - there wasn't any more limescale and calcium deposits.

We take this opportunity to thank you for the great service.

Mr. Caltron Aqua

AIGVA·DE·RIGAT·S·A



# Residential Installations



## Residential Installation in California

USA



Barbara & Jacques  
Healdsburg, CA, 95448

Jorge Rebagliati  
Vulcan Scale Protector  
P.O. Box 6662  
Santa Rosa

Dear Jorge,

After purchasing the Vulcan, we immediately noticed a difference in the water consistency, which appeared softer on our skin.

However, the most profound change was the lack of deposits on all the usual places: the dishes, all faucets and showerheads. What a relief!

Finally we just enjoy our water system without having to replace pipes regularly or add vinegar and substances to counteract the mineral build-up.

We would recommend this product to all who live in the country on well water, as we do.

Sincerely,

Barbara & Jacques

## Residential Outdoor Installation in Florida

USA

### Anti-Scale System "Vulcan" in a private home in Orlando, Florida

**Model:** Vulcan 5000  
**Location:** Private house in Orlando, Florida, USA

**Installation Company:** Clearwater Systems  
Lake Mary, FL 32746  
Florida – USA  
[www.PureWaterFlorida.com](http://www.PureWaterFlorida.com)

**Client's comments:** This is our "Whole House Purification System" made possible by the CWT water treatment system "Vulcan".

The Anti-Scale system replaces the resin tank that removes the scale. Our system is now "Maintenance Free".



## Lance Butcher Garden Sprinkler Systems

Western Australia

LANCE BUTCHER,  
Gelorup, Western Australia

### Water treatment system against scale and rust by CWT

My wife and I live on a 5 acre property at Gelorup, 20 minutes south of Bunbury in Western Australia. Our local water contains high levels of rust, which was causing enormous problems with our reticulation system. Large quantities of iron sludge and chips would build up in the piping system and block the solenoids and individual sprinklers. The situation was getting us both down. It seemed like the sprinklers were continually blocked and I was replacing the solenoids every six months.

Within three months of installing the CWT water treatment system the rust residual and sludge disappeared. I was staggered by the results. The pipe was completely clear and there were no signs of the iron scale at all.

A reliable and clean sprinkler system is very important for us to maintain a healthy garden which contains more than 200 rose bushes and half an acre of trees and cottage garden. Our horse paddocks are also under reticulation. The CWT system has saved me an enormous amount of time and money and I'm no longer cleaning sprinkler heads or replacing the solenoids in the reticulation system.

The results have been so successful we are now planning a major expansion of the garden and bird aviary. I would recommend this product for anyone who lives in a hard water area in Australia. They're simple to install and maintenance free.



Lance Butcher from Western Australian enjoying his clean sprinkler system after installing the Vulcan Descaler

## Residential Installations in Florida

USA



### Vulcan Residential Installations

These are some examples of Vulcan installations from various home owners in Florida, USA.

#### Installation details

Model: Vulcan 5000  
 Home Owner: Wayne F.  
 Location: Tallahassee  
 Florida



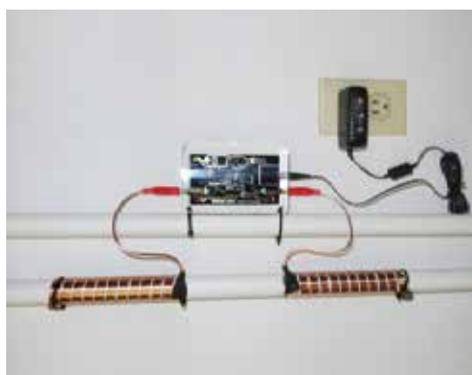
#### Installation details

Model: Vulcan 5000  
 Home Owner: Chin L.  
 Location: Tallahassee  
 Florida



#### Installation details

Model: Vulcan 5000  
 Home Owner: James D.  
 Location: Tallahassee  
 Florida



## Test Report - Well Water

USA

Salt-free water systems LLC  
Cicero, IN 46034  
Phone: 317 416-3625  
Email: Sales@Salt-FreeWaterSystems.com  
Web: www.Vulcan-USA.com

To the Salt-free water systems team,

Our well water is extremely high in iron and calcium. Day-to-day we live with several issues caused by the well water. The calcium build up requires constant maintenance, replacement of faucets annually, replacement of shower curtains monthly and a new set of glasses about every 6 - 12 months. In addition to this, our water softener requires 160 pounds of salt every 5 weeks. Over a one month time period, I discovered both shower faucets in our home would require replacement which would require the removal of shower wall tiles. In addition, two of the outside faucets needed replacement. One of these outside faucets had so much calcium build up, that it would not close and the other one had no flow. This is when I decided to give the Vulcan water conditioner a try.

I installed a Vulcan on the PEX inlet water line just before the water softener and before it splits off to outside faucets in December. The Vulcan has now been installed for just over 2 months.

About three weeks after installation, in early January, I heard water running outside. I went to the back of my home and discovered the outside faucet there running at full stream. This faucet did not work at all and now it was running at or near full flow. All because of Vulcan.

It had been 6 weeks, since I added salt to the softener, so I assumed it would take every bit of the 4 bags I purchased, but when I opened it up, I discovered I was barely able to get three bags in. I estimated I was only using about 50% of the salt quantity I was previously using. All because of Vulcan.

Just 2 months after installing the Vulcan, I went to take a shower and I noticed the faucet was completely free of calcium and operating like new. I went to the second bathroom and noted additional improvement in that one as well, and the shower hoses in both bathrooms are no longer stiff. All because of Vulcan.

The day I installed the Vulcan, I went around and took several photos of corrosion and build up of calcium scale on the outside of the kitchen and bathroom faucets. While I haven't noticed a significant reduction in the build up in most areas, I did find almost a complete removal of the build up on drinking glasses. Below is a photo of a drinking glass that is just over a year old before installation and a photo of that same glass 2 months later.



I am absolutely convinced that the Vulcan has been a worthwhile purchase.

Bob Lugenbeal  
Lebanon, Indiana

## Family Home Installation

Germany

CHRISTIANI Wassertechnik GmbH  
Heinrich-Heine-Straße 15

D-52249 Eschweiler

Ihre Zeichen      RC/RM  
Ihre Nachricht vom    07.02.2006  
Unsere Zeichen      KH

VULCAN 5000

Dear Sir,

I would like to thank you for allowing us to use the Vulcan 5000 as a trial device in our family home. The self installation did not prove to be a problem.

On the first evening after the installation I was pleasantly surprised as I drank a glass of tap water. It has since then tasted different, cleaner and milder.

A few days after installing the VULCAN 5000 I was able to remove the scale in my shower cubicle with only a damp cloth which before could only be removed with dissolving agents. The massage shower head in the shower cubicle has in the meantime recovered its full efficiency without any effort on my part. This was previously only achievable through regular intensive cleaning and soaking in detergents for long periods of time. The taps and sinks, bathtubs and shower cubicles no longer have dull surfaces, instead they shine with no need for intensive cleaning. Also since then we have been able to reduce the amount of washing powder used in the dishwasher and washing machine by half. My wife and I look forward to a life without further 'calcification'.

I am pleased to be able to recommend the Vulcan 5000.

Yours Sincerely,

*H. Haran*



# Independent Studies and Scientific Papers

## Physiological Institute of the University of Munich

Germany

# PHYSIOLOGICAL INSTITUTE

Medical Facility  
Ludwig-Maximilians-University Munich

Directors: Prof. Dr. G. ten Bruggencate, Prof. Dr. E. Gerlach, Prof. Dr. h.o.K. Thureau

Dipl.-Phys. Franz Rucker

Physiological Institute Pettenkoferstr. 12 80336 München

Pettenkoferstr. 12  
80336 München

Christiani Wassertechnik GmbH  
z.Hd. Herrn Kleefisch  
Heinrich-Heine-Str. 15  
52249 Eschweiler

### **Test of the electronic water-treatment system Vulcan 5000 for the cooling system of the laser Innova 90-K of the company Coherent GmbH (user report)**

Dear Mr. Christiani

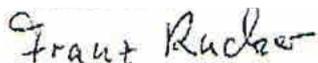
Referring to our telephone call on the 18th of December, I would like to send you a description of our trial of your electronic water-treatment device Vulcan 5000.

The system Vulcan 5000 was installed at the end of March in the coolant inflow of a crypton gas laser Innova 90-K manufactured by the company Coherent GmbH, supplied with water from the system of mains, to reduce or even avoid lime deposits on the ceramic covering of the laser tube. Over the past years we constantly had difficulties with laser tubes which were not in working order any more and consequently had to be replaced due to thick lime deposits on the ceramic of the tubes through which the coolant flows with approx. 9L/min and a pressure of approx. 2.5 bar and at the same time heats up to a temperature between 60°C and 70°C depending on the gas discharge electricity (tube electricity) between 30 A and 40 A.

The system Vulcan 5000 is an economic alternative to expensive heat exchangers, i.e. closed circulations of coolant with treated water. These heat exchangers cost about 5,000€. The device Vulcan 5000 has been used on a trial basis since the end of March to treat the coolant of our gas laser. On the 12th of December the company Coherent GmbH checked the laser tubes for lime deposits on the ceramic surface. No lime deposits were detected, therefore, it is in all a positive result.

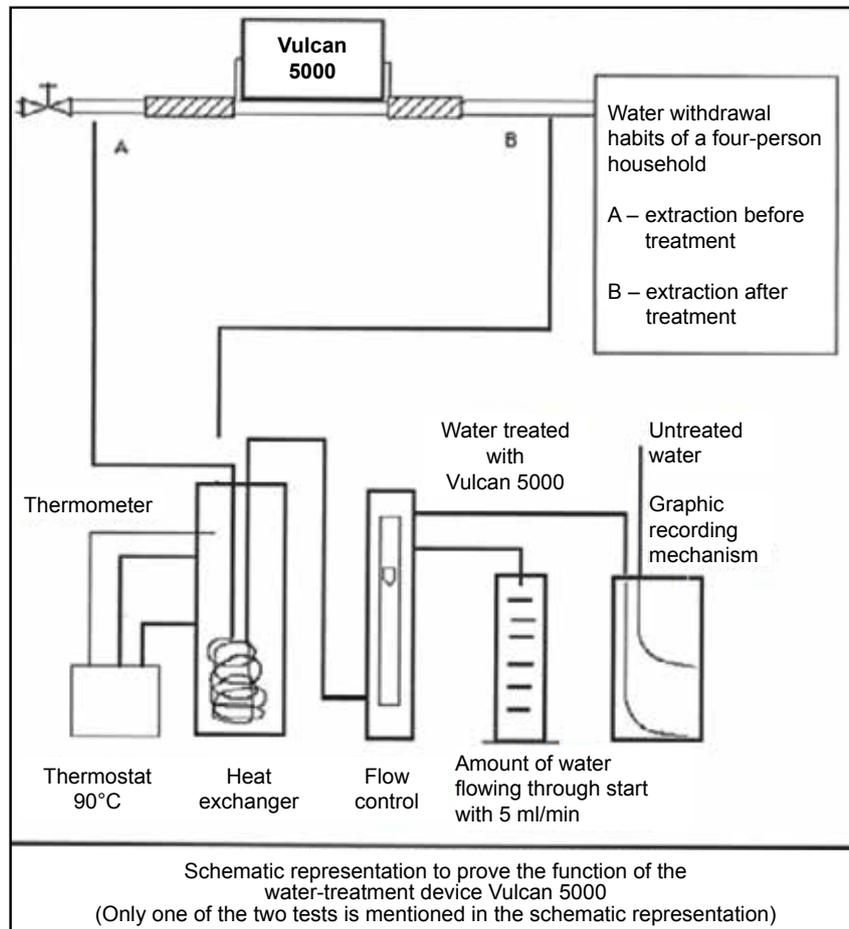
During the test period the laser was in operation approx. 200 hours with a laser tube electricity ranging from medium to maximum and with operation times between four and eight hours. These operation periods and the accomplishment required correspond to the normal use of the laser in our fluorescence microscopic experiments. Laser tubes previously used in a similar way, which worked without a treatment of the coolant, showed considerable lime deposits.

Fanz Rucker



**Steinbeis Institute Foundation**  
Germany

## Centre for Environmental Chemistry





**STEINBEIS-STIFTUNG FÜR  
WIRTSCHAFTSFÖRDERUNG**  
(Foundation of economic promotion Reutlingen)

**TRANSFERZENTRUM REUTLINGEN  
ANGEWANDTE UND UMWELTTECHNIK**  
(Transfer Centre - Applied and environmental chemistry)

**Expertise**  
Concerning the effect of the water-treatment device  
"Vulcan 5000"

Test subject: water treatment device "Vulcan 5000"

Manufacturer: Christiani Wassertechnik GmbH (CWT)  
Heinrich-Heine-Str. 15  
D-52249 Eschweiler

Test instruction:

A test should be carried out to determine whether Vulcan 5000 can reduce lime deposits in water pipes and household equipment in a purely physical manner without altering the water chemically.

Experimental demonstration of function:

The effect was verified in a heat exchanger arrangement using two identical testing units. Water was withdrawn from the water pipes simultaneously upstream and downstream of the device to be tested and calcium precipitation forced in the heat exchangers.

As lime deposits increase, the flow of water decreases. The more water flows through the experimental arrangement, the smaller tendency there is for the water to form scale on pipes and container walls. The test was carried out on the basis of the practice-related water withdrawal of a four-person household with the additional regular withdrawal of five litres of water at half hourly intervals for a total of six weeks.

This test showed that the tendency to form lime deposits is reduced considerably by the "Vulcan 5000" water-treatment device. In addition, the effect continues for some days after "Vulcan 5000" has been switched off. Seemingly, the effect is not only limited to a certain part of the pipe, but also passed into the water flowing nearby sections of the pipe.

Reutlingen,

(Prof. Dr.D. Frahne)

## Physical Water Treatment as the Solution for Cooling Towers

Japan

### Test report on Vulcans (pulsed water treatment systems) installed as a preventive measure against scale buildups causing faulty of the cooling towers

**Tested field:** Factory of a pharmaceutical company  
**Installation sites:** Cooling towers on the rooftop of the second building  
 2-1 cooling tower **A:** Makeup water piping size is 50A.  
 2-2 cooling tower **B:** Makeup water piping size is 50A.  
 1 cooling tower **C:** Makeup water piping size is 50A and circulating piping size is 80A.

**Model installed:**  
 Vulcan S25  
 (water treatment capacity: 25 m3/hour)

**Date installed:**  
 For the cooling towers A, B, and C: July 22  
 For the cooling tower C: October 6

Vulcan installed on the  
 makeup water piping (50A)



Vulcan installed on the  
 circulating piping (80A)



Used for cooling towers A, B and C    Used for the cooling towers C

**Objectives:**

- 1 To prevent scale buildups on the cooling towers.
- 2 To reduce chemicals used for water treatment  
 (measure for complying with ISO 14001)
- 3 To save the energy cost by preventing the deterioration of the heat exchange effectiveness

#### Verification of the effectiveness:

After installation of the Vulcans, the statuses of the cooling towers A, B, and C were inspected without using any water treatment chemicals. Even after elapse of approximately six months, almost no scale buildups were observed inside the refrigerators and the heat exchanger tubes, and no water pollution warning was displayed. (Usually, without water treatment chemicals, the water quality is deteriorated and water pollution warning is displayed.) Silica adhered on the cooling towers was easily removed with a finger touch. With these results, the effectiveness of the installation of the Vulcans could be confirmed.

#### Remarks (Summary)

The water treatment system, Vulcan, has the following features: (For details, refer to the brochure attached.) Vulcan changes only the crystal structure of scales without changing the quality of water. Therefore, nothing is added or reduced to or from the ingredients of water. The water through Vulcan is soft and has an increased permeability. Vulcan can be used as better cooling water.

(\*) The effectiveness of the water treatment in the water supply line will last for 2-7 days and for approximately 2 km in distance.

Major features include:

- Prevents buildups of rusts and scales
- Makes cleaning in the kitchen and bathroom much easier (toilets, showers, tiles, joints, etc.)
- Drastically reduces the clogging due to oil balls
- Eliminates the necessity of strong chemicals for removing scales.
- Eliminates the necessity of additives.
- Does not change the water quality.
- Prevents the clogging at the time of drainage

**Test report on Vulcans (pulsed water treatment systems) installed as a preventive measure against scale buildups causing faulty of the cooling towers**

Cooling Tower A      Cooling Tower B



Cooling Tower C



**Developments after installation of the Vulcan**

Adhesion of silica six month after the installation of the Vulcan



water is hosed



after the hosing



Silica is not removed by hosing, but can be peeled off with a nail.

Silica is removed by simply hosing the water. (The remaining silica is peeled off with a touch of a finger.)

The installation of the Vulcan in the circulation line seems to create the status equivalent to the cooling tower C.



**Water quality tests on the cooling tower C**

Quality tests of three types of water approximately six months after the installation of the Vulcan:

- (1) Makeup water
- (2) Circulating water
- (3) Makeup water (raw water)

# TÜV Nord Certificate

Germany



## Zertifikat

*Certificate*

**Registrier-Nr.**

*Registered No.*

**44 324 12 409661**

**Zeichen des Auftraggebers**  
*Customer's reference*

Herr Christiani

**Auftragsdatum**  
*Date of order*

21.06.2012

**Aktenzeichen**  
*File reference*

2.4-234/94 Golo/Er

**Prüfbericht Nr.**  
*Test report no.*

12324409661 - 002

**Name und Anschrift  
des Auftraggebers**

**Christiani Wassertechnik GmbH  
Köpenicker Str. 154  
10997 Berlin**

*Name and address of  
the customer*

ist berechtigt, das unten  
genannte Produkt  
mit dem abgebildeten Zeichen  
zu kennzeichnen



*is authorized to  
provide the product  
mentioned below with  
the mark as illustrated*

**Fertigungsstätte**

**Christiani Wassertechnik GmbH  
Köpenicker Str. 154  
10997 Berlin**

*Manufacturing plant*

**Geprüft nach**

**DIN EN 60335-1:2012-10**

*Tested in accordance with*

**Das Produkt entspricht den Anforderungen des Produktsicherheitsgesetzes ProdSG § 21**  
*The product is conform with the requirements of the Product Safety Act – ProdSG § 21*

**Beschreibung des  
Produktes**  
*(Details s. Anlage 1)*

**Wasserbehandlungsgerät  
Typ Vulcan xxx**  
*Water treatment equipment  
type Vulcan xxx*

*Description of product  
(Details see Annex 1)*

**TÜV NORD CERT GmbH  
Zertifizierungsstelle  
Fachleiter Konsumgüter**

**Gültig bis / Valid until: 13.12.2017**



**Essen, 14.12.2012**

**Bitte beachten Sie auch die umseitigen Hinweise**  
*Please also pay attention to the information stated overleaf*

## CE Certificate

Germany



### CE Declaration of Conformity

**Issuer's name and address:** Christiani Wassertechnik GmbH  
Köpenicker Str. 154  
10997 Berlin  
Germany

**Product:** Water conditioning appliance

**Type designation:** Vulcan  
3000/ 5000/ S10/ S25/ S100/ S250/ S500

The designated product is in conformity with the European Directive:

**89/336/EEC  
including amendments**

**„Council Directive of May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility“.**

Full compliance with the standards listed below proves the conformity of the designated product with the essential protection requirements of the above-mentioned EC Directive.

**DIN EN 55014-2 (VDE 0875 Teil 14-2): 2002-08; EN 55014-2:1997 + A1:2001  
Requirements of category II  
DIN EN 55014-1 (VDE 0875 Teil 14-1); 2003-09; EN 55014-1:2000 + A1:2001 + A2:2002  
DIN EN 61000-3-2 (VDE 0838 Teil 2): 2001-12; EN 61000-3-2:2000  
DIN EN 61000-3-3 (VDE 0838 Teil 3): 2002-05; EN 61000-3-3:1995 + Corr.:1997 + A1:2001**

The VDE Testing and Certification Institute (EU Identification No. 0366), Merianstr. 28, 63069 Offenbach, has tested and certified the product granting the VDE Approval for the mark(s) as displayed.

**Certificate No.** 94050  
**File Reference** 1898800-4521-0001 / 75684 FG43 / FU

Berlin, 01.01.2016  
(Place, Date)

(Legally binding signature of the issuer)



Christiani Wassertechnik GmbH  
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Germany

## Clients

Excerpt from our client list worldwide



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