# HARD WATER PROBLEMS ARCHING OR TER & ENE SAVINGS? Teo **SOLVED EASILY!**

Technologically Advanced Product, System & Method for Water Conditioning & Treatment (Chemical-Free)

Residential • Light Commercial Deposit Control Technology To Meet The Needs Of Any Application





Bacteria Corrosion Algae and Colloids In All Fluid **Based Systems** 

**Control Scale Deposits** 

**Improve The Use, Quality** And Taste Of Your Water!

TWT<sup>®</sup> The Smart Water **Treatment Solution:** 

# **The Green Market** Answer



When the TWT systems are properly installed, the effects of the triangularwave water conditioning & treatment last downstream.

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TRIANGULARWAVE **Chemical-Free Water Treatment** 

**PS86** 

ISO Certified Facility

# Do You have An Effective Water Treatment System?

Triangularwave deposit control systems offer all the positive effects of soft water and cleans existing deposits, without the use of traditional salts and chemicals.

# Ensure that the water in your home or office is safe enough to use and drink...TWT<sup>®</sup> Is Your Simple and Safe Solution



# Water and What is in It!

# Water Basics

Water is generally classified into two groups: Surface Water and Ground Water. Surface water is just what the name implies; it is water found in a river, lake or other surface impoundments. This water is usually not very high in mineral content, and many times is called "soft water" even though it usually is not. Surface water is exposed to many different contaminant's, such as animal wastes, pesticides, insecticides, industrial wastes, algae and many other organic materials. Even surface water found in a pristine mountain stream possibly contains Giardia or Coliform Bacteria from the feces of wild animals, and should be boiled or disinfected by some means prior to drinking.

Ground Water is that which is trapped beneath the ground. Rain that soaks into the ground, rivers that disappear beneath the earth, melting snow are but a few of the sources that recharge the supply of underground water. Because of the many sources of recharge, ground water may contain any or all of the contaminant's found in surface water as well as the dissolved minerals it picks up during it's long stay underground. Waters that contains dissolved minerals, such as calcium and magnesium above certain levels are considered *"hard water."* 

Because water is considered a "solvent", ie, over time it can break down the ionic bonds that hold most substances together, it tends to dissolve and 'gather up' small amounts of whatever it comes in contact with. For instance, in areas of the world where rock such as limestone, gypsum, fluorspar, magnetite, pyrite and magnesite are common, well water is usually very high in calcium content, and therefore considered "hard".

Due to the different characteristics of these two types of water, it is important that you know the source of your water -- Surface or Ground. Of the 326 million cubic miles of water on earth, only about 3% of it is fresh water; and 3/4 of that is frozen. Only 1/2 of 1% of all water is underground; about 1/50th of 1% of all water is found in lakes and streams. The average human is about 70% water. You can only survive 5 or less days without water.

## What is Hard Water?

Hard water is the most common problem found in the average home or facility. Hard water is water that contains dissolved hardness minerals above 1 GPG.

# What are hardness minerals?

Calcium, manganese and magnesium are the most common.

### How do you measure hardness?

Parts per million or grains per gallon are the most common. One part per million (PPM) is just what it says: out of one million units, one unit. Grains, or grains per gallon (GPG) is a weight measurement taken from the Egyptians; one dry grain of wheat, or about 1/7000 of a pound. It takes 17.1 PPM to equal 1 GPG.

### Why should hard water concern me?

For many uses, it would not matter. For instance, to put out fires, water your lawn, wash the mud off the streets or float your boat, water would have to be pretty hard to cause a problem. But for bathing, washing dishes, clothes, shaving, washing your car and many other process uses of water, hard water is not as efficient or convenient as "soft water."

### **For instance:**

- You use only 1/2 as much soap cleaning with soft water, because hard water and soap combine to form "soap scum" that can't be rinsed off, forming a 'bathtub ring' on all surfaces and drys leaving unsightly spots on your dishes.
- When hard water is heated, the hardness minerals are re-crystallized to form hardness scale. This scale can plug your pipes and hot water heater, causing premature failure, necessitating costly replacement.
- The soap scum remains on your skin even after rinsing, clogging the pores of your skin and coating every hair on your body. This crud can serve as a home for bacteria, causing diaper rash, minor skin irritation and skin that continually itches.
- For many industrial uses, the hardness minerals interfere with the process, causing inferior product.

TWT systems work to consistently deliver high quality water, reduce scale and bio-fouling in plumbing systems, and to increase efficiency of both once-through and re-circulating systems.

Lots of Companies Provide Products and Systems...TWT, Inc. Senses Environmental Needs with Intelligent Solutions.

# Patented TWT<sup>®</sup> Chemical-Free Deposit Control Technology Residential/Light Commercial Hard Water Conditioning & Treatment System Fully Assembled Plumb Plug & Play Units



### TWT5C8-472PVCPP

Applications for pipes up to 1" or less in diameter

PACKAGING CONTENTS

- A.TWT-5C8-472 DC plate mounted unit with pipe mounting clamps & wire connectors
- B.Factory wrapped 1"X 10" PVC (IRC) industrial reaction chamber
- C. Electrical transformer



D. Owners manual E.System registration card Optional:110/20V or 220/30V (Custom built to order only) Approx unit size:8.5" X 6"



Product # TWT5C8-472CSECPP Applications for pipes up to 1" or less in diameter

#### PACKAGING CONTENTS

- A.TWT-5C8-472 DC plate mounted unit with pipe mounting clamps & wire connectors
- B.Factory wrapped 1" X 11" (ICRC) industrial copper pipe reaction chamber



C. Electrical transformer D. Owners manual E.System registration card Optional:110/20V or 220/30V

(Custom built to order only) Approx unit size:10.5" X 6"



**Installation:**\* Licensed plumber and/or contractor suggested for application and installation of equipment.

### Four Simple Steps:

- 1. Plumb the reaction chamber into water feed line.
- 2. Run and connect the provided wire to the reaction chamber as illustrated.

The triangularwave System is easy to install. A standard 110V electrical outlet is needed near the unit installation (unless other current source requested prior to purchase). The most desirable place to install the unit is immediately after the water meter, or before any plumbing line tee, so that the entire plumbing system is treated for deposits. The TWT System is provided with a transformer. The transformer should



3. Clamp the TWT plate mounted controller onto pipe installed reaction chamber 4. Plug the unit in to electrical outlet.

Optional: St/St industrial reaction chambers available upon request No maintenance required as long as current is provided to unit at all times. Deposit controllers are designed be self tested (see owners manual).

not be plugged in until the installation is completed.The unit may be installed outdoors at a wellhead for example, provided a separate weatherproof housing such as NEMA enclosure is used. Because the unit is a solid state device, it may be mounted in any position necessary.

#### • The Only Products & Systems That Pay for Themselves • TWT® Makes Sense from an Economic, Operational & Safety Point of View



\* TWT deposit controllers will operate effectively if installed in either horizontal or vertical position.

Email: info@triangularwave.com • triwaveinc@aol.com • websites: www.triangularwave.com • www.twtwatertreatment.com

# Suggested Chemical-Free Treatment Technologies for End-To-End Well Water Applications Filtration, Conditioning & Purification (Process application & installation guidelines).

- •\*Filtration: removes dirt & particulate matter
- Deposit Control Technology: hard water conditioning & treatment
- Purification Technology: Kills bacteria and other harmful pathogens.

Ultra violet systems for the disinfection & purification of potable & process water are sold for two main purposes: First, to kill bacteria and viruses that are currently in the water supply and second, to ensure that future contamination does not occur.

 Iron and Manganese present in water: Iron removal filtration system required. Contact yout distributor or TWT, Inc. for additional information.

## **Optional: TWT® stand-alone product configuration for end-to-end water treatment & conditioning**



# **The Difference In Technology Matters!**

### **ENERGY SAVINGS:**

Initial estimates indicate savings of between 15% to 30% on water heating bills in hardwater areas.

### **REDUCED MAINTENANCE:**

Prevents scale build-up and dissolves existing scale, making water heaters more efficient.

### **PROVIDES THE EFFECT OF SOFTENED WATER:**

The water is scum-free and gives the benefit of soft water on skin, hair, clothes, and food preparation.

### **REQUIRES LITTLE OR NO MAINTENANCE:**

No moving parts. Design life cycle at 20+ years.

### **PORTABLE AND COMPACT:**

Can be disconnected and brought with you when moving.

### **EASY INSTALLATION:**

Requires little plumbing. A domestic electrical supply is all that is required.

### A NEW BEGINNING IN WATER TREATMENT

- twtwatertreatment.com gives you water safe enough to drink, bath and cook.
- Free consulting
- Money back guarantee: Our treatment systems are designed and crafted to the same exacting standards required of fluid conditioning products and systems manufactured worldwide.

### REMEMBER THIS...YOU GET WHAT YOU PAY FOR

 How many times have you bought the cheapest and been disappointed when it broke or failed to perform to your expecta tions? And how many times have you bought the best and been well pleased for a long time.



Triangularwave Technologies, Inc. products and systems provide technologically advanced methods for water and fluid management that are both efficient and cost-effective. Components and subsystems chosen from across the range of treatment methods can be combined in different configurations to provide custom solutions specific to any industry, site or application.

### Versatile Fluid Management Products & Systems To Effectively Meet The Needs Of Any Industry & Application

**TWT<sup>®</sup> Saves:** Chemicals, Water, Energy, Labor, Time and Materials.

### Lifecycle Savings:

Savings continue typically for 10 years or more from date of installation. Savings accelerate after the payback period and

TWT systems work to consistently deliver high quality water, reduce scale and bio-fouling in plumbing systems, and to increase efficiency of both once-through and re-circulating HVAC, process cooling, agriculture, industrial processing, wastewater and other fluid based systems.

continue for the life of the system.Lifecycle savings are thus typically many times the cost of the TWT System.

### **Treatment for Existing Equipment:**

Retrofit existing equipment to improve its operating efficiency and life cycle

### **Protection for New Equipment:**

TWT provides new equipment with the ability to enhance the product benefits and features.

# **Applications**:

- Home /Office Light Commercial Facilities Medical/Dental Environments
- Irrigation Food Processing Equipment Boilers / Water Heaters
- Manufacturing Processing Equipment
  Spray Systems
- Swimming Pools & Spas Residential / Office Plumbing Breweries
- Coffee & Tea Dispensers Bottleless Water Coolers Washing Machines
- Humidifiers Ice Machines Small Water-Fed Appliances
- Lawn & Sprinkler Systems Mobile Homes Aquariums
- Marine Industry / House Boats All Other Water and Fluid-Based Applications

TWT, Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. TWT has the versatile, efficient, cost-effective methods to solve your fluid management problems end to end.

> Visit Triangularwave Technologies, Inc. (TWT®) Comprehensive Websites. The Valuable Technical Resource For All Involved In Water And Fluid Management.

www.twtwatertreatment.com • www.triangularwave.com

TWT makes sense from an operational, economical and safety point-of-view.

Thank you, The team at TWT, Inc.



# No Matter How Tough The Job...TWT® Has The Solution

TWT<sup>®</sup> The Ultimate in Water Treatment & Conditioning

The green way

