

# The Cost of Wasted Water

Tim True

Director of Sales, Service and Marketing

Dimplex Thermal Solutions

Koolant Koolers Brand Chillers



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Did You Know?

Do you know how much water you are wasting every day? How about every year? You may not realize that in normal manufacturing operations a tremendous amount of water is wasted. You may be surprised to know that although over 70% of the Earth's surface is water, 97% of that water is salt water, leaving only 3% for [fresh water](#). Of that, only 1% is fit for human consumption. Though water is technically a renewable resource, our supply of water is decreasing faster than it can be replenished.



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



By Dimplex Thermal Solutions

# Close Off The Drain

The cost of water can add up quickly for a pass-through system, especially if running multiple shifts in a day.



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# The REAL Cost of Water is:

## Both the Water and Sewage Charges



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Calculating Water Charges

- Water rates have skyrocketed over the past 12 years
  - Atlanta +233%
  - Portland +161%
  - Cleveland +131%
  - Chicago +116%
  - Dallas +75%



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

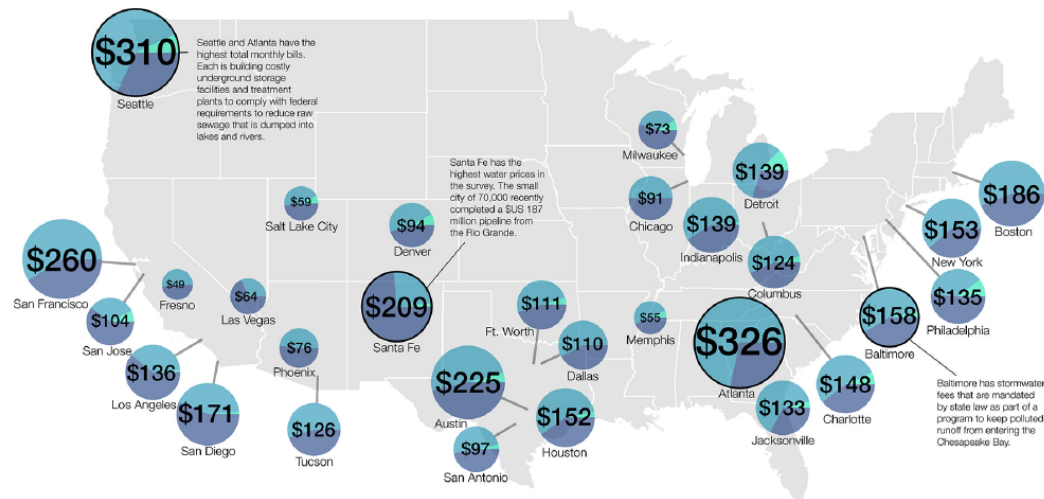
[www.resistanceweldsupplies.com](http://www.resistanceweldsupplies.com)



# Calculating Water Charges

## THE PRICE OF WATER: 2015

Combined water, sewer and stormwater prices for households in 30 major U.S. cities.



**Water** prices pay for treating, pumping, and delivering water, while sewer prices cover the cost of cleansing the water that goes down the drain.

**Sewer** prices are often higher than water prices because more energy and chemicals are required for treatment. Following the Clean Water Act, the federal government gave grants for new treatment plants during the 1970s and 1980s. Over the past three decades, however, new spending has been cut for local sewer infrastructure.

**Stormwater** fees are not included in every city's monthly bill. Some cities use general tax revenues to pay for projects to reduce polluted runoff from streets and parking lots. However, these projects must then compete for funds with other departments like police and schools.

Rates current as of April 1, 2015.  
Monthly bill calculated for a family of four using 100 gallons per person per day.  
Source: Circle of Blue research, based on utility water rates.

 circle of blue



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Calculating Water Charges

Typical Water and Sewage Rates Based on Fifty 40 Hour Weeks.

Water Use		Cost Per Thousand Gallons		
GPM	Annual	\$2.00	\$5.00	\$8.00
1	120,000	\$240	\$600	\$960
5	600,000	\$1,200	\$3,000	\$4,800
10	1,200,000	\$2,400	\$6,000	\$9,600
25	3,000,000	\$6,000	\$15,000	\$24,000
50	6,000,000	\$12,000	\$30,000	\$48,000
75	9,000,000	\$18,000	\$45,000	\$72,000
100	12,000,000	\$24,000	\$60,000	\$96,000



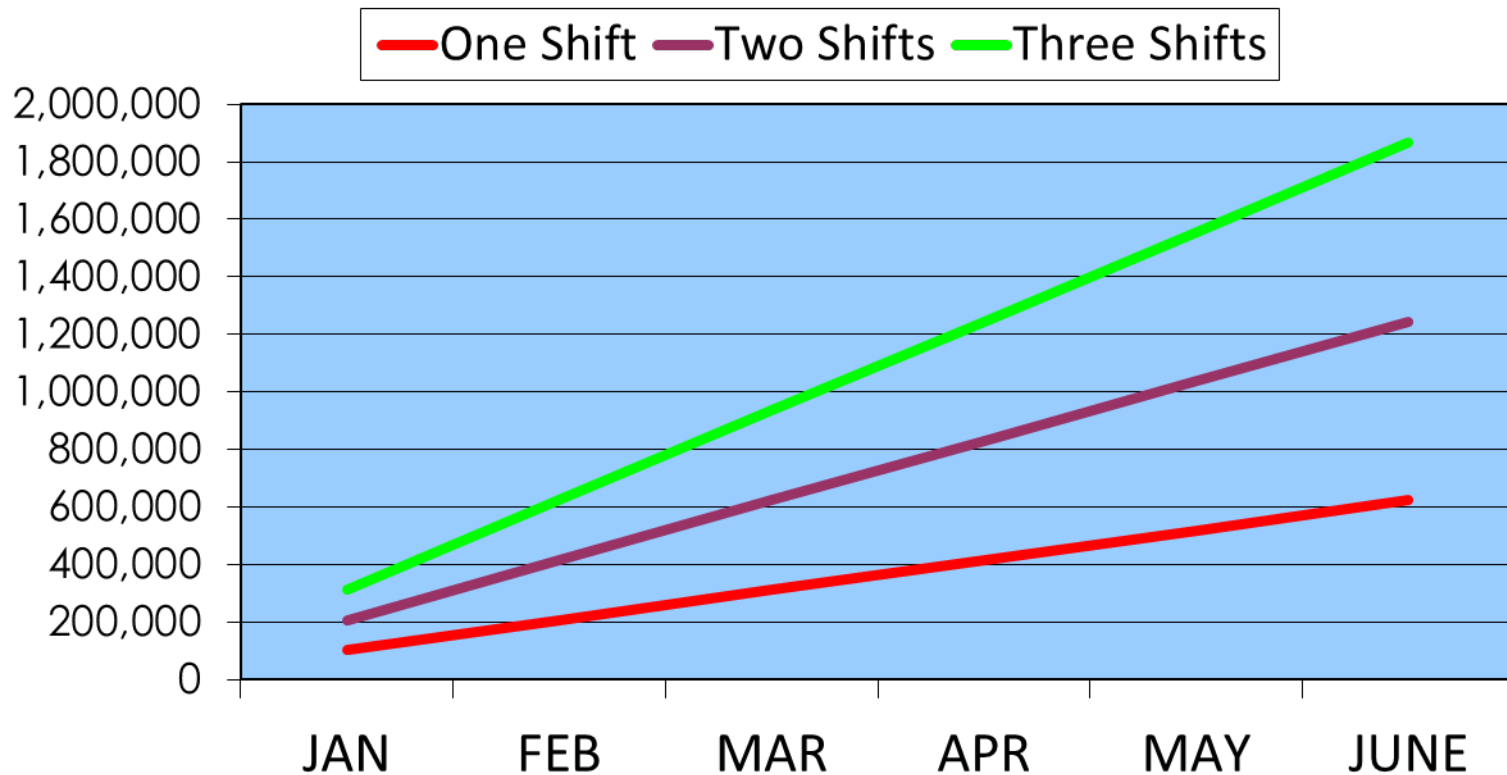
**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Months of Water Use @ 10 gpm



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



By Dimplex Thermal Solutions



# What Are the Ways to Cool Water?

- Water to Air Recirculator
- Cooling Tower
- Tap Water
- Closed Loop Water Chiller



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Water to Air Re-circulator

- No control of water temperature
- Dependent on load (limited cooling capacity)
- Humidity and ambient can effect cooling



# Cooling Tower

The most objectionable of all cooling processes:

- No control over the chilled water temperature
- Evaporation leads to increased water \$\$\$
- Dirt and other contaminants lead to poor heat transfer
- Cannot dump due to EPA regulations



**PRODUCTION ENGINEERING**

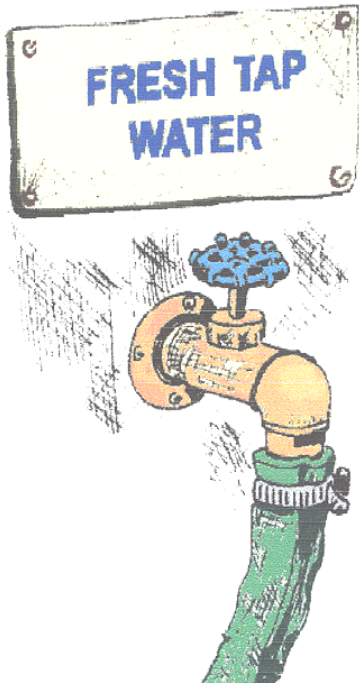
888-654-WELD (9353)

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



# Tap Water

**Please Don't Use More Than 6M Gallons Per Year!**



- No control over water temp
- Condensation is a problem
- Cost of water
- Cost of dumping



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# The Best Solution

## Closed Loop Water Chiller



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Why a Closed Loop Water Chiller?

## 1. **ABSOLUTE CONTROL:**

Finest product in the lowest production time

## 2. **REPEATABILITY OF PARTS AND TOLERANCES:**

Control the temperature and duplicate parts with exacting tolerances

## 3. **PROPER HEAT TRANSFER:**

Consistent temperature for optimal performance

## 4. **PROTECT YOUR INVESTMENT:**

Keeps capital equipment and valuable components from failing

## 5. **SAVE IN COST OF WATER AND SEWAGE:**

**This alone can pay for the chiller!**



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# WHO NEEDS A CHILLER?

- Resistance Welders
- Lasers
- Waterjet
- Thermal Spray
- Plasma Cutters

Anyone with an application that requires  
cooling water!!



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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



# Cost: Water vs. Electricity

JH1000 (460/3) = FLA 7 @ 10 gpm

Annual Cost of Electricity = \$1,500

Annual Cost of Water = \$6,000

(Single shift 10 gpm flow at cost of \$5 per 1000 gallons)

Operating Costs Saved: \$4,500

+ lower maintenance and downtime for cleaning

*Payback less than two years*



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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







COMMENTS?  
QUESTIONS?

**THANK YOU!**



**PRODUCTION ENGINEERING**

888-654-WELD (9353)

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

