

# Bore Water Control, “backed by Science”



## Is your water corrosive or scale-forming?

### BORE WATER

Bore water is water recovered from ground water resources and is generally described as hard water or saline water. The term saline is often interpreted as being salty water because of the associated taste but this taste may be associated with alkalinity, bicarbonates, iron bacteria and other metals.

### WATER AND MINERALS

Water, although we all use it, is a complex and often a misunderstood substance. We know it is “wet”, a condition that everyone can recognise.

It is the chemical interactions within the water that are most difficult to understand and deal with, however these affect how we use and treat the water.

A water test reveals a series of numbers that list such things as hardness, pH, salinity, iron, calcium, sodium, magnesium, potassium and a range of other things that can be measured. Unfortunately, these mean little to most people, so we tend to rely on the things that we can “see”.

### EFFECTS OF HARD WATER

Hard water with high calcium and magnesium quantities will precipitate from the water, as the water reaches saturation levels and form carbonates that in turn form scale deposits on the surfaces the water comes in contact with. This scale deposit occurs in a number of common applications;

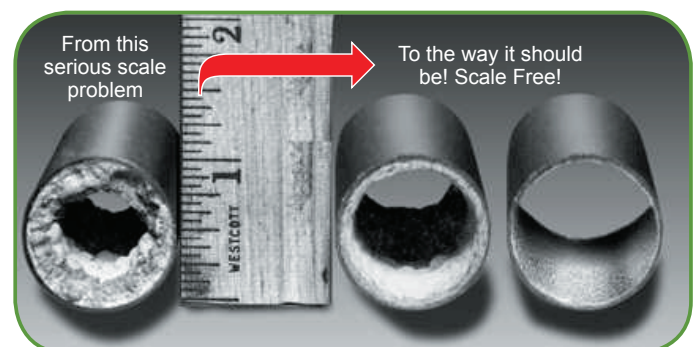
- Water pipework, valves, taps
- Boilers and hot water units
- Water storage tanks
- Swimming pool tiled or marble sheen surfaces
- Irrigation systems
- Cooling towers

The scale deposits are an excellent haven for bacteria to hide and for slimes and algal growth. The total effect of the scale and slime build up in pipes and fittings decrease the flow capacity, increases the friction loss and increases the pump head requirement thus reducing the pump life. The scale deposit is greater at increased temperatures and during water static periods. The more scale-forming minerals in the water, the more blockages in pipework that will occur. (see photo below)

### BALANCING OUT WATER

#### TO REMOVE THE EXCESSES IS NOT EASY:

- Boiling water only makes whatever is in water more concentrated
- Distilling water makes it pure, but leaves a lot of waste and is expensive
- Reverse osmosis – leaves sodium to be disposed
- Using filters only removes particles that are large and eventually blocks up
- Use of magnets
- Adding material or dosing will allow some balancing of the water



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### BETTER AND NEWER METHODS AVAILABLE:

- Reactive dosing system
- Saturation modeling
- Template assisted crystallisation
- Nano Technologies
- Scale, bacteria, oils and chemical removal

These systems give a better way forward and are backed by over a hundred years of science.

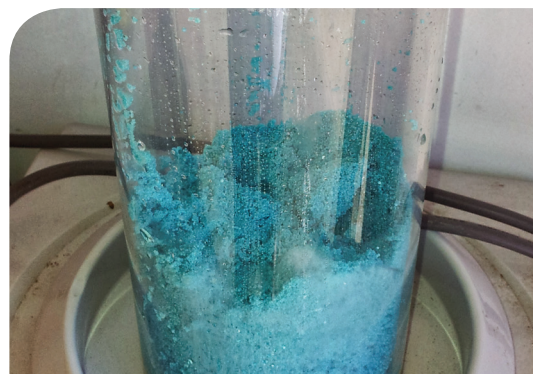
### WHAT IS SCALE FORMING?

The photos below show a buildup of calcium-carbonate, dirt, chloride, magnesium's and others. This can block pipework and irrigation systems.

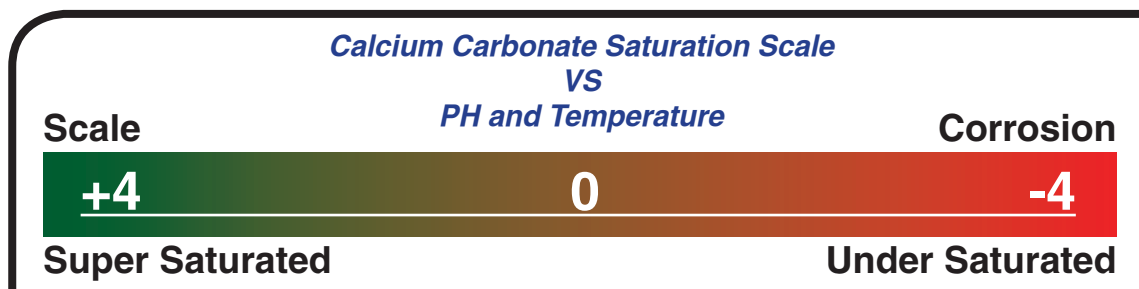


### WHAT IS CORROSION?

Corrosion in the photos below is showing the metal attack with high sodium waters being the predominant mineral.



- WATER TESTING
- IRON REMOVAL
- SALINITY CONTROL
- CROP BENEFIT
- WATER BALANCE



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