



# SHOP TALK

VOLUME 12, ISSUE 1

JANUARY 2010

## Water Hardness In Boilers And Scale Formation

Since water is the key ingredient used in a boiler system, it is important to understand just exactly what is in the water you will be using. We recommend that customers have a water analysis performed so they have a true picture of what they are dealing with.

One item that will be quantified in the analysis is the hardness. This is really the amount of mineral contamination that is found in your water. This degree of contamination can be measured by either a chemical analysis or by measuring the water's ability to conduct (or resist) an electrical current.



efficiency it was designed to deliver.

Unless your boiler receives water of proper quality, the boiler's life will be needlessly shortened. A steam plant's water supply may originate from rivers, ponds, under ground wells, etc. Each water supply source requires a specific analysis. Depending upon this analysis, various pretreatment methods may be employed to prepare makeup water for your boiler feed water system.



We normally work with the grains per gallon expression as it is the easiest for all to understand. Imagine if you took a pill that weighed 8 grains and dissolved it in 1 gallon of pure water. The result would be 8 grains per gallon. Simple and easy to understand, however, others like to express water hardness as mg/l or ppm.

Take your fuel costs to run a new boiler and then allow boiler scale to accumulate to a thickness of a mere 1/10th of an inch (about the thickness of a 5 cent coin) through improper water treatment and you will have bumped up your fuel costs by a whopping 20%! Add the costs of repair and downtime in the case of heavily scaled boilers (1/4 inch of scale or more) and you are risking substantial Cash losses.

When was the last time that you had your systems water analyzed? Water chemistry is not a constant and sometimes the experts even become too lax in there jobs and the system suffer. Don't fall victim to scale. Have your water analyzed regularly.



Water hardness becomes an issue as soon as heat is applied in the boiler system. The most common problem is that of scale formation, a problem that will rob your system of the

Scale Thickness (inches)	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
% Increase in Fuel Consumption	15%	19%	23%	30%	38%	43%	50%	58%	63%	70%

## New Guy Thrown Under The Bus



I would like to introduce myself; my name is Greg Salazar, better known as the “New Guy” at Johnson Paterson, oh they have called me other names as well but I cannot repeat them here. Although it has all been in jest, I do appreciate that they even notice that I am here. Yes they have thrown me under the bus a couple of times and much to their dismay I have come up with only a few scratches to show for their efforts.

A little background; I have been in the HVAC industry all of my adult life, starting at Consumer’s Gas Company way back when, I started when I was a student there and moving up the ranks until I ventured out on my own. I owned and operated a very successful mechanical company for 20 something years and that experience has provided me with an exceptional education in the HVAC industry; so much so that I started teaching approved TSSA courses throughout North America for the last ten years.

I bring to the table a background full of industry knowledge, including sales, management, and technical knowhow. I am hoping I can help all customers of Johnson Paterson new and old alike with any problems or requests they may have.

My job here is to expand Johnson Paterson’s involvement in the commercial hot water market, so for all your hot water boiler needs please contact me at Johnson Paterson Inc. 905-727-0084 or send me an email to [gsalazar@johnsonpaterson.com](mailto:gsalazar@johnsonpaterson.com).

**These are priceless.**

**Do any of these people work for you and if they do please don't send them to me**

**IDIOT SIGHTING:**

My daughter and I went through the McDonald's take-out window and I gave the clerk a \$5 bill. Our total was \$4.25, so I also handed her a quarter. She said, 'you gave me too much money.' I said, 'Yes, I know, but this way you can just give me a dollar bill back.' She sighed and went to get the manager who asked me to repeat my request. I did so, and he handed me back the quarter and said, 'We're sorry but they could not do that kind of thing.' The clerk then proceeded to give me back 75 cents in change.

Do not confuse the clerks at MacDonald's.

**IDIOT SIGHTING:**

We had to have the garage door repaired. The Sears repairman told us that one of our problems was that we did not have a 'large' enough motor on the opener. I thought for a minute, and said that we had the largest one Sears made at that time, a 1/2 horsepower. He shook his head and said, 'Lady, you need a 1/4 horsepower.' I responded that 1/2 was larger than 1/4 and he said, 'NOOO, it's not. Four is larger than two.'

We haven't used Sears repair since.

Happened in Ottawa, ON

**IDIOT SIGHTING:**

I live in a semi rural area. We recently had a new neighbour call the local township administrative office to request the removal of the DEER CROSSING sign on our road.

The reason: 'Too many deer are being hit by cars out here! I don't think this is a good place for them to be crossing anymore.'

Happened in Collingwood, ON

**IDIOT SIGHTING:**

My daughter went to a local Taco Bell and ordered a taco. She asked the person behind the counter for 'minimal lettuce.' He said he was sorry, but they only had iceberg lettuce.

Happened in Winnipeg, MB

**IDIOT SIGHTING:**

I was at the airport, checking in at the gate when an airport employee asked, 'Has anyone put anything in your baggage without your knowledge?' To which I replied, 'If it was without my knowledge, how would I know?' He smiled knowingly and nodded, 'That's why we ask.'

Happened in Toronto, ON

**IDIOT SIGHTING:**

The stoplight on the corner buzzes when it's safe to cross the street. I was crossing with an intellectually challenged co-worker of mine. She asked if I knew what the buzzer was for. I explained that it signals blind people when the light is red. Appalled, she responded, 'What on earth are blind people doing driving?!'

She is a government employee in Montreal, QC



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### **IDIOT SIGHTING:**

When my husband and I arrived at an automobile dealership to pick up our car, we were told the keys had been locked in it. We went to the service department and found a mechanic working feverishly to unlock the driver's side door. As I watched from the passenger side, I instinctively tried the door handle and discovered that it was unlocked. 'Hey,' I announced to the technician, 'it's open!' His reply, 'I know. I already got that side.'

This was at the Ford dealership in Guelph, ON

### **STAY ALERT!**

Kerry Johnson

## **“Happy New Year”**

I want to welcome everyone to 2010 and I hope it is even better than 2009.

Usually I promote savings in my articles but not this time as I believe we need to spend.

I hope everybody spent every cent they could during the holiday season as the economy is still in need of a boost.

Here are a few things to think about at this time of year.

- 1) Change your furnace filter
- 2) Change batteries in your Thermostat if it requires one.
- 3) Change batteries in your clocks.
- 4) Install winter tires.
- 5) Be sure there is an emergency kit in your vehicle for commuting.
- 6) Top up your wind shield washer fluid (with winter fluid).

For your commercial and industrial property it is very important to be sure your boilers are running at peak performance level. So please have these units checked as the weather is now getting cooler it will enable the combustion to be checked and set properly to meet the upcoming demand for heat.

Please also remember for all of your emergency service calls 905-727-0084.

Once again **“HAPPY NEW YEAR”** be well and be safe.

Barry Keough