



# AQUATRINE

## WINTER 2012 news

### Leaving buildings empty in winter

**W**hether you are closing up a vacant MoD building or leaving your own home during the winter period, it's important to consider and execute a winter plan of action for the building to avoid unexpected pipe bursts or water damage.

Water leaks which develop could increase your water bill significantly, but could also cause massive damage. This is especially true of pipes which freeze and burst. Once they burst, there is nothing to hold back the large stream of water which will start to flow.

There are a number of options to prevent such incidents from happening;

- **Turn off the water at the main supply point.** Make sure that the water supply is turned off completely at the mains.
- **Drain all water that can be drained** by turning off the water supply tap and running the taps until they run dry.
- **Turn down the heat, but don't turn it off** - that's if you decide not to drain the water pipes. Set your thermostat to a level adequate to keep the inside temperature above freezing and to keep things dry. About 13-14°C is a recommended temperature to ensure the building is kept warm and damp is prevented.
- **Drain water outlets.** If you live in an area where freezing pipes can be a problem, drain toilets, water heaters (turn off gas or electric supply first) and if on a pump system, the expansion tank. You can also completely eliminate or dilute the water in drain traps by pouring an appropriate non-toxic antifreeze solution in them as directed by the instructions.



- Close the sink and tub drains.
- If a house is to be vacant for a long time, you may prevent water in a toilet's trap from evaporating (and thereby permitting sewer gases to enter the home) by raising the toilet's lid and seat and covering the bowl with saran wrap.
- **Turn off the water heater before you drain it.** Drain water from a pump by using its drain plug. For dishwashers, refrigerators (with a water dispenser or an ice maker) and clothes washers, follow the manufacturer's directions. Remove and empty any "whole house" or "in line" type filter canister. Remove any water filter inside the refrigerator.
- **Make sure that your insurance coverage is adequate for being absent during winter.** Due to the increased potential for something to go wrong (for example, burst water pipes, leaking gas heating systems, etc.), insurance companies can be tough on requirements.
- **Have someone make regular checks.** If there is a neighbour or family member living close-by, ask them to pop in regularly and check for any issues.

These measures should prevent the possibility of freezing damage to your plumbing and heating systems, but always consider the most effective and safest option for your specific building and circumstances. For example, consider if the risk of fire is small compared to the risk of burst pipes. If you have an oil fired central heating system or decide to use electric heaters, then you may consider the risk of fire to be higher than draining your tank and water pipes, which may be a more effective precaution to take.

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# Team Aquatrine raise an incredible £1,300 for charity!

The organising committee would like to say a huge thank you to everyone who donned their walking boots, cycling shorts and braved the elements in September to raise money for charity by taking part in the Aquatrine Challenge.

Although we narrowly missed our target of covering all 558 miles from HMNB Clyde and RAF Brize Norton to Catterick Garrison, this year's Challengers still managed to raise more than £1,000 for WaterAid and Combat Stress and we're pleased to report that donations are still coming in!

Our thanks also go to everyone who dug deep in their pockets to sponsor colleagues who took part this year.

A great deal of effort goes into organising the Aquatrine Challenge each year and, based on feedback, we'd very much like next year's event to be more inclusive, allowing as many people as possible to get together for a one day event. We'd therefore greatly appreciate your ideas and suggestions so that next year's Challenge provides us all with the opportunity to meet up socially while raising money for charity at the same time. If you've got any suggestions, please get in touch by emailing [DIOOpsSouth-aquatrinepmo@mod.uk](mailto:DIOOpsSouth-aquatrinepmo@mod.uk)

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Scenes from this year's Aquatrine Challenge

## Tips for keeping safe this winter

**Bad weather can strike suddenly and with British winter being unpredictable, make sure you are prepared and drive according to the conditions.**

The impact of drivers failing to adjust from 'summer driving mode' remains a major factor in the rise in crashes expected during the winter months with heavy rain, leaf fall and greasy road conditions creating treacherous driving conditions throughout winter.

More hours of darkness as the clocks go back may require slower speeds – especially in the evening as earlier darkness means children are still on their way home in the dark.

Peak Performance offers the following suggestions for motorists following the end of British Summer Time:

- Don't wait until it's fully dark to turn your lights on – see and be seen
- Take particular care where children may be playing as light fades, especially between 4pm and 6pm
- Look out for pedestrians and cyclists wearing dark clothing
- Check your windscreen wiper blades are in good condition and the washer reservoir is topped up
- Keep the windscreen clean and clear

- Carry a spare pair of shoes in your car as dry soles make it easier to drive
- Check your lights and tyres, including your spare tyre
- Wipe your head lights and tail lights to keep them bright.

### Keep safe while visiting sites

Please be cautious when moving around sites for the risk of falling ice from buildings and structures this winter.

The recent freeze and thaw in northern parts of the British Isles has created hazards that are not usually apparent when we are working outdoors.

Some additional hazards we all may recognise include:

- **The risk of slipping** – use ice grippers or make sure that all pathways are cleared and salted
- **Additional Driving hazards** – drive suitably for the conditions only making necessary journeys.

Further hazards occur when icicles or masses of snow is situated on any structure including service reservoirs and buildings (hanging from the gutters, windows and



fascias). If an icicle, ice or snow were to fall when it is thawing and hit you on the head or penetrate your skin, there is a risk of serious injury. With the prediction of cold weather this is something for us to be aware of.

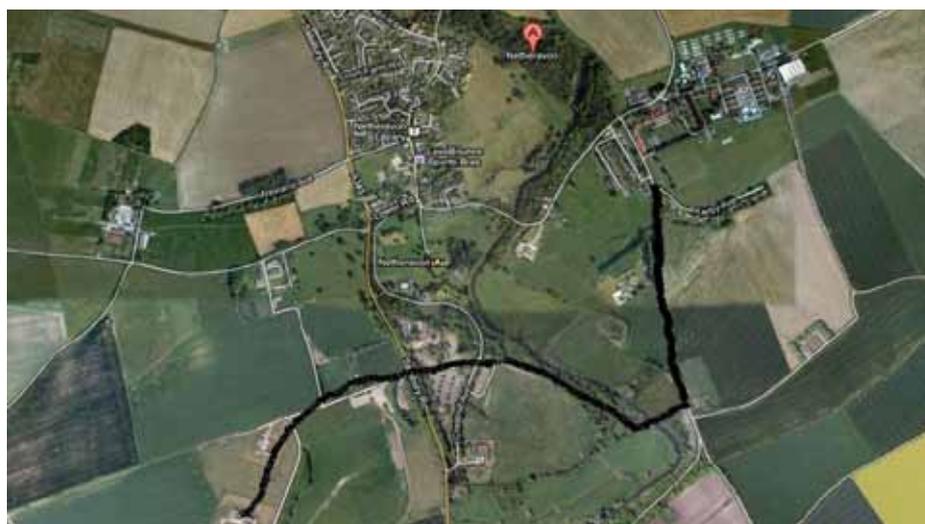
Please ensure that you check you are not walking adjacent to buildings with icicles or snow overhanging from the gutters, etc. and, if there are any, then please walk a safe distance away from the building/asset, just in case.

## SPTA Super Garrison – Improving Security of Supply

**Kelda Water Services Defence (KWSD) are moving forward with a project to link Netheravon Camp boreholes to the Larkhill/Westdown Camp grid via a network spur from Larkhill Camp.**

KWSD project initiator, Regional Water Supply Manager, Mark Chalkley says the project has a number of strategic benefits for the MoD and KWSD, the link will result in greater flexibility in respect of potable water availability, in effect increasing our water grid across Salisbury Plain to over 10 miles. It is of particular interest as MoD formulates plans to accommodate troops across SPTA, that are returning from Germany. A further MoD benefit will be the new network will also enable water to be supplied to a valuable asset in the Netheravon area.

In respect of KWSD the benefits we will realise are, reduced risk of water quality issues at Netheravon Camp, that can be the result of the insufficient flow associated with the 'drawdown process' and the provision of increased volumes of borehole water at Larkhill Camp, which will reduce the likelihood



**Netheravon Camp**

of KWSD needing to supplant volumes with supplies from the local supplier Wessex Water.

The project has got backing now from all stakeholders across PAC and DIO and has progressed through the TAEM 100 review stage.

KWSD are in the final stages of agreeing partners to push the programme into a fully costed project phase and onto installation.

The whole process has a projected completion date of March 2013.



## C2C are now Severn Trent Costain

From 1st October 2012, C2C changed to Severn Trent Costain. C2C began as a partnership between Severn Trent Services and Costain, which was formed specifically to deliver Package C of the Aquatrine Contract.

From its formation in 2005, C2C has managed the water and wastewater assets and services across all 1,300 MoD sites in Package C, including the delivery of over 7.1 million m<sup>3</sup> of water per year, continuously collecting and disposing of sewage and surface water, and ensuring the water is safe by taking over 70,000 samples each year.

This partnership has been so successful that both Severn Trent Services and Costain have solidified this relationship by forming the new joint venture company Severn Trent Costain. Severn Trent Costain combines the skills and experience of these two companies, operating across Great Britain to take responsibility for all business water management needs.

We will continue to work in close partnership with the MoD to proactively look for other ways of helping achieve



water management targets, identify ways to reduce costs, improve efficiencies, ensure compliance and protect the environment. Our vehicles, personnel uniforms, documentation, etc. have now changed from the C2C name to Severn Trent Costain.

For more information about Severn Trent Costain, our web address is now: [www.severntrentcostain.com](http://www.severntrentcostain.com) and you can email [info@severntrentcostain.com](mailto:info@severntrentcostain.com). (Please note that the MoD contact number will remain: 0845 85 00 249).

## Normandy Water Softening

Severn Trent Costain has recently commissioned and put into service a water softening plant at Normandy barracks (previously DST Leconfield). Comprising of an 18 tonne salt store (food grade) and four pairs of softeners, the new plant is now able to treat up to 600m<sup>3</sup> with ease and has preparation ready to expand should the site requirements change.

Water softening is a process which uses salt to remove lime scale (or CaCO<sub>3</sub> as scientists refer to it) and other chemicals from within raw water. Such chemicals build up within pipework over time and can lead to reduced efficiencies in plant assets, such as boilers, as well as reduced pipe capacities through encrustation.

Maintenance of boilers isn't an easy task and the site had previously trialled using two sets of plates for the exchangers as well as different cleaning methods. However, each method meant that the heating system would have to be isolated and turned down, which resulted in site occupiers having no access to warm water for certain periods...not ideal with winter weather!

One of the key drivers behind the site installing this softening plant was reduced levels of efficiency within the boilers and increasing maintenance costs from the heat exchangers. The lime scale build up and increase in thickness meant that the efficiency of the plates was reduced, resulting in increased natural gas (energy) usage to warm the same quantity of water to a comparable temperature and the increased time taken to heat it.

Severn Trent Costain managed the project on behalf of the MOD, commissioning the plant within six weeks of site mobilisation. The construction methodology included everything from below ground pipework to the saturator which was stood up using a mobile

crane. Planning permission restrictions meant that it had to be painted green to match the surroundings, as well as being contained within a concrete bund (surrounding) to protect the base of the softener.

The softener uses salt every time it re-generates and this is known as the backwash. The backwash cleans the resin within the black canisters housed within the tower which is where the softening occurs. The regeneration usually takes place every 24 hours or 600,000 litres of water used per day. To put that into perspective, the average person only uses around 160 litres of water a day which includes everything from using a shower, to toilet flushing, to the food used in cooking, alternatively it is the equivalent of filling a Caterham windscreen washer fluid bottle over 117,647 times!



The 18 tonne salt store



Water softening canisters



# Aquatrine providers commended at Sanctuary Awards 2012

**This year's MoD Sanctuary and Energy Awards were held on 16th October, where both Kelda Water Services Defence and Severn Trent Costain received commendations on the night.**

Two projects initiated by Kelda Water Services Defence (KWSD) at Loe Pool in Cornwall and Llyn Penrhyn in Anglesey, were thrilled to be awarded the winners in the "Environmental Project" category.

The aim of these two projects has been to find the real impact of sewage discharges on the aquatic environment at both Loe Pool and Llyn Penrhyn.

KWSD has been working with a number of organisations and the MoD to find information which can be used to manage the sewage treatment works in the most environmentally friendly way, and to ensure that all of the partners involved are happy with the outcome.

● **Loe Pool** is Cornwall's largest natural freshwater body and has six tributaries, one of which receives flow from RNAS Culdrose STW. The Loe Pool Forum deals with many different conservation matters concerning the lake, one of which is the increased phosphorous levels. A technical working group was set up comprising KWS Defence, the Environment Agency, the Navy, the National Trust, and the local council. A year-long program of water quality and flow sampling from the six tributaries was successful in gathering data which showed the levels of nutrients flowing into the lake, and the relative importance of each source. The data has been used in 2012 by the EA to model various options for the phosphorous consent at the sewage treatment works.

● **Llyn Penrhyn** is a small lake in Anglesey next to RAF Valley. In 2010 the Llyn Penrhyn Conservation Group proposed that all stakeholders work together on a year-long data gathering exercise to get impartial information which could be used to decide on proper management of the lake's inputs. Members of the group are KWSD, the Royal Society for Protection of Birds (RSPB), the MoD, the Countryside Council for Wales (CCW) and the Environment Agency Wales. Bangor University has also become involved, in the form of SEACAMS (a marine research group with EU funding which includes Universities at Swansea and Aberystwyth).

Award submission feedback stated: "The partnering approach taken at Loe Pool and Llyn Penrhyn demonstrates what can be achieved when different organisations work together in pursuit of a positive environmental outcome. We are thrilled that the working groups are receiving this award as it reinforces the strengths of collaboration."

### Highly Commended

Kelda Water Services Defence weren't the only award winners on the night from Aquatrine as members of Severn Trent Costain also received a Highly Commended in the Awards.

The Meter Maintenance Project Team put forward their entry to the MoD Sanctuary and Energy Awards earlier this year, for their project on solar-powered water meters. The



**KWSD scooped the Environmental Award on the night**

Award Board recognised the team for their dedication and drive to ensure the success of this trial.

Severn Trent Costain saw the benefits in solar-powered water meters to help improve the continuity of measurement for leakage and water consumption across the 1,300 MoD sites in which they manage water and wastewater services. The initial project was to provide mains electricity to the meters but due to the physical location of some of the meters e.g. being behind trees, etc, this was not deemed a viable option. To overcome this challenge, the team conducted a trial over a 3-month period to power 10 ABB AquaMaster electromagnetic water meters using photo-power supplies.

An additional environmental benefit of this trial is the reduction in carbon footprint, as 7,700 fewer batteries will be required over the remainder of the Aquatrine Contract, and for the meters that aren't suitable for a photo-voltaic power supply; the transmitters can be re-used as spares.

This three month trial has been so successful that Severn Trent Costain are extending this to a further 20 sites, with the potential to extend this to all 1,100 meters across Package C over the coming years.

Congratulations to all teams involved!



**Highly Commended winners, including Severn Trent Costain**



# Interview with... Nigel Paterson

**Nigel Paterson is Chief Operating Officer for Veolia Water whose subsidiary, Veolia Water Nevis, is responsible for managing Aquatrine Package B in Scotland. Nigel has been involved in Aquatrine from the beginning, recently joining the Aquatrine Supplier Association (ASA) Steering Group.**

● **You were involved with Aquatrine at the beginning. What was your involvement in the Project back then?**

Nevis was established in 2005 to deliver Aquatrine Package B. I was involved in Aquatrine when the contract was initially signed and I was responsible for the team starting up.

● **Next year, Aquatrine will celebrate its 10 year anniversary. From your initial involvement, is the contract working as you envisaged it?**

When the contract first got underway there were a number of areas that we needed to work on such as building relationships with our stakeholders including DIO (then DE) and establishing roles and responsibilities so that queries could be channelled through to the right people. It was a big change for the stakeholders who managed the sites as they had previously been responsible for water and wastewater distribution themselves. Aquatrine is an output based contract and, at Nevis, we wanted to ensure that we provided a good service to end users. It wasn't about the ins and outs of the contract, rather the service provided.

Another challenge faced, especially by Aquatrine Package B, was the physical logistics of getting to some of the remote sites and building up a working knowledge of those sites.

The team used different systems to monitor data remotely so that we could target incidents of unaccounted for water more effectively. We introduced remote monitoring of the networks, which allowed Nevis to identify leakage whether it be on the network or in a building and have repairs carried out before it affects the customer. This has been invaluable over the years especially during winter conditions when numbers on site can be low and buildings empty.

Today, we've overcome these initial challenges by using smart systems and we are working in an environment where communication is crucial and we share best practice in a forum such as the Supplier Association.



**Nigel Paterson**

● **What do you see as the biggest Challenge facing Aquatrine at the moment?**

The main challenge will be to understand the implications of the Strategic Defence Review and how the change of use and demand at some of the bases will affect Aquatrine operations. We are working closely with our client to establish what changes might be needed so that we can continue to provide an excellent service.

● **What are your expectations for the Aquatrine Supplier Association over the next 12 months?**

In the early days of the Supplier Association we needed to establish ground rules i.e. what could be discussed and how we could help each other on certain issues

without infringing confidentiality clauses or disclosing commercially sensitive information. Now the Supplier Association has matured so that the Service Providers work clearly within the boundaries and are able to work collaboratively together and share information to fulfil ASA objectives.

● **Is there anything else you'd like to add?**

Aquatrine Package B provides services to DIO throughout a single country; Scotland and we have a terrific relationship with Scottish Water who operate and maintain our facilities and are very much part of the team. I also value the teamwork and sharing that takes place through the Supplier Association and look forward to continuing to work together with the other suppliers into the future.