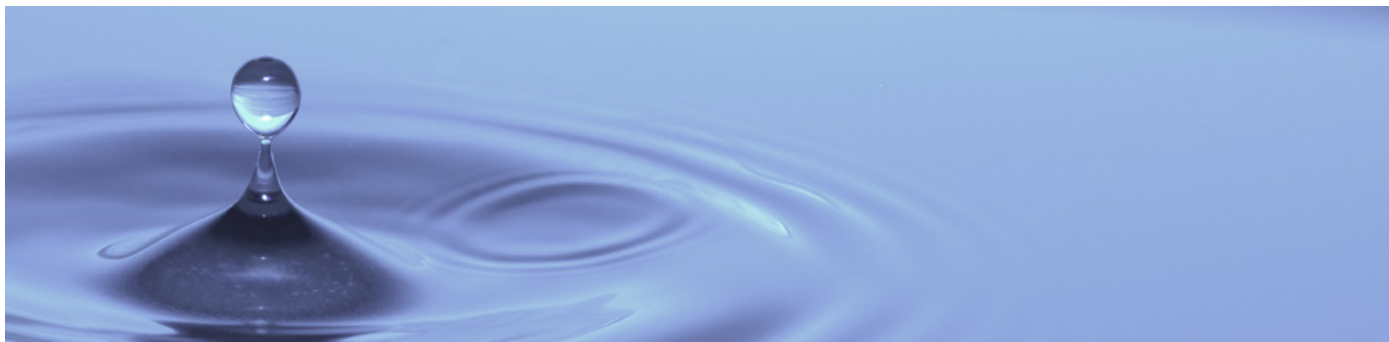


Transitioning to On-line Cartridges for Drinking Water Testing



Analytical on-line cartridges for environmental testing from Biotage were released in 2016. Russell Gibbs from Dŵr Cymru Welsh Water has just started using them for drinking water testing.

Russell Gibbs has more than 20 years' experience in analytical water and soil chemistry. Today he is the Organic Chemistry Technical Specialist at Dŵr Cymru Welsh Water (DCWW) in Newport. Welsh Water are unique among Water Companies in that they operate as a not-for-profit company, allowing for £32 million to be re-invested for the benefit of customers in 2016 alone.

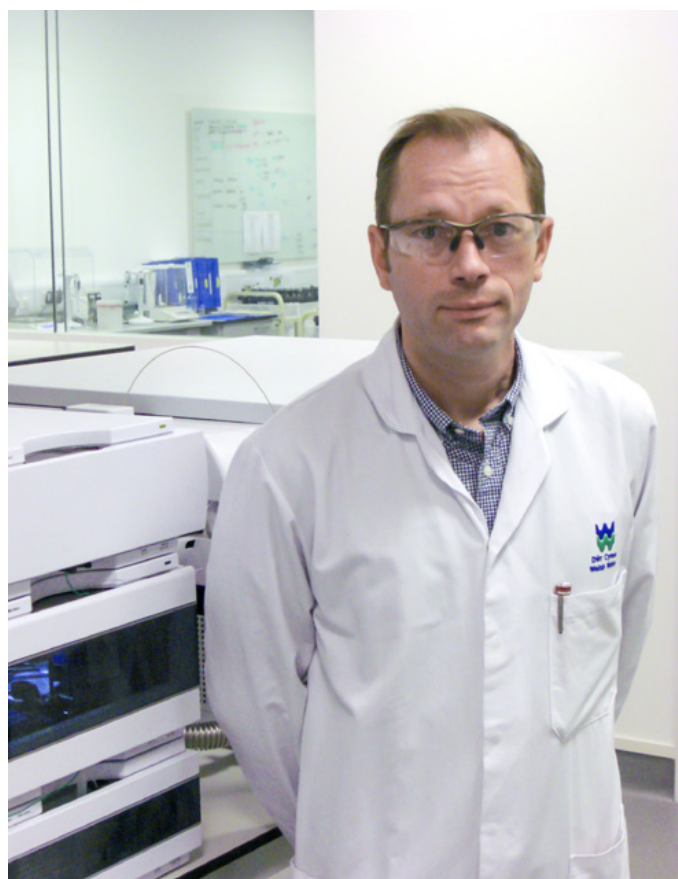
– When I was Technical Manager with a large commercial environmental testing laboratory I was approached by Welsh Water, who were opening a new laboratory. They were bringing together an entirely new team of scientists and needed someone with technical experience to develop methods for water testing. It sounded like an exciting opportunity and I jumped at the chance.

Russell Gibbs' long history in the environmental testing field has given him a deep understanding of available tools for testing labs, as well as their needs.

– My role is essentially analytical method development. I am responsible for identifying new technology which can be used to meet the company's current and future analytical needs and to ensure that we're progressive in the testing and research that we do.

Low detection limits present a challenge and are increasingly important in any laboratory working with environmental legislation.

– A lot of the analysis carried out and the compounds we look for are driven by legislation. Certain regulations, like the Water Framework Directive which commits member EU states to achieve good qualitative status for all bodies of water, are




Russell Gibbs is the Organic Chemistry Technical Specialist at Dŵr Cymru Welsh Water in Newport.

driving the need for lower and lower detection limits. Limits in drinking water are at sub parts per billion levels which requires detection limits to be at parts per trillion. As a result we are always looking at novel ways of achieving these limits, while at the same time ensuring the methods are robust enough to cope with the high throughput required in a busy laboratory. The online SPE column is a step in this direction. In the future we will be able to take a much larger volume of sample on to the column and achieve even lower detection limits, perhaps by a factor of ten or even one hundred. This future proofing of the laboratory allows us to be prepared for any potential changes in legislation.

Standard ISOLUTE® ENV+ columns have been around for some time. Russell Gibbs is now using the new ENV+ on-line cartridge for drinking water testing.

– We have a standard suite of acidic herbicides, one that is very similar to a suite I am familiar with from my time in a previous consultancy role when I used ISOLUTE ENV+. The detection limits required for that method weren't as low, because it was being used for contaminated land and waste water analysis. However, we have transferred that suite of compounds to this new method for drinking water testing. Obviously, as with any new method, there are issues we have had to deal with, such as peak tailing and co-elution, so we have made minor modifications to the method.

Dŵr Cymru Welsh Water



Dŵr Cymru Welsh Water is a not-for-profit organization and the sixth largest of the ten regulated water and sewerage companies in England and Wales. Welsh Water is responsible for providing over three million people with a continuous, high quality supply of drinking water and for taking away, treating and properly disposing of the wastewater that is produced.

Welsh Water serves 3 million people with 828 million litres of water every day. It is the 4th largest company in Wales with 3,000 employees. £1.5 billion was allocated to an investment programme during 2010–2015.

Welsh Water has assets of 26,500 km of water mains, over 30,000 km of sewers, 838 sewage treatment works and 66 impounding reservoirs.

www.dwrcymru.com



From off-line to on-line. ISOLUTE® ENV+ has long been the sorbent of choice of solid phase extraction of polar organics from water samples, and is now available in on-line cartridge format.

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