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**David Clapham**
*Senior Associate RH Environmental*

*Article photographs, courtesy of David Clapham, Lauren Margrove and John Murphey.*

# PRIVATE WATER SUPPLIES

## OH Glee - New Regulations

**New regulations for private water supplies (springs, boreholes, etc. not provided by a water company) were introduced at the beginning of last year.[1] Private water supplies remain a source of faecally contaminated water in many rural areas.**

Local authorities have had over a year to organise and operate their new procedures under the regulations and are coming up with a number of questions regarding their implementation in the field. The regulations have generally been welcomed in principle by local authorities as they introduced risk assessment as part of the safety regime. The previous regulations relied on sampling as the sole means of deciding if the water was safe to drink and this was inaccurate – official microbiological failure rates were around 30% of samples, whilst actual failure rates are often over 70%.[2] Thus reliance on end testing was a) missing many problems and b) alerting LAs to problems after the event. The regulations were ten years in the writing and you would thus assume that they were perfectly drafted. Unfortunately the regulations and the attendant guidance have come in for some criticism.

One of the latest official advice notes, for example, declares that a private supply feeding both a commercial milking parlour and a separate single dwelling is now to be considered a single domestic-only supply.[3] This Kafkaesque pronouncement has resulted, it appears, not from a reassessment of the regulations but following a campaign by the National Farmers Union.[4] Not only is it difficult to understand the logic of this pronouncement, but it makes one wonder what else could be changed to satisfy other lobbyists.

Other sections of the regulations have brought in a range of sampling requirements, enforcement responsibilities, standards for materials to be used, a range of fees and charges and introduced the somewhat confusing concept

## Welcome to the Summer Issue of the FWR Newsletter

The main focus of this issue is private water supplies and important factors affecting the compliance with the Private Water Supplies Regulations 2009 in practice.

We are grateful that David Clapham has agreed to write the key article. In his role as Principal Environmental Health Officer in Bradford, David was a leading light in organising training courses, workshops and discussion groups. He is also the author of the FWR Guide 'Householder's Guide to Private Water Supplies', published last year.

In addition, on page 4, Mike Waite reports on the recent RSPH meeting on PWS. Page 6 presents an article by Tim Evans on the state-of-the art of anaerobic digestion.

As usual, from the WFDIC section there is an outline of current developments and initiatives in river basin management. On the last page, Caryll Stephen, FWR Chief Executive, reports on our current activities and the Library section informs about new publications available from the FWR bookshop.

For more information we invite you to have a look at our FWR website *(http://www.euwfd.com)* or *(http://www.fwr.org)*. You can also contact us by email or telephone (see details on the last page).

***The Editor***

## THIS ISSUE

FWR Water Supply
the information centre for water, wastewater and related environmental issues

of private distribution networks (also called "onward distribution"). The regulations are generally stringent for commercial, large or public supplies but much less so for smaller domestic supplies. Single property supplies are virtually exempt but owners can request help from LAs.

## RISK ASSESSMENT

Once the supply has been assessed it is almost invariably considered as high risk and even when improvements are completed, it often remains technically high risk based on the official forms. A useful piece of research would be to assess the process to see if it mirrors actual risk, rather than merely being a hazard spotting exercise. Although the regulations themselves do not specify the risk assessment forms to be used, the Drinking Water Inspectorate requires local authorities to use a standard set of on-line forms to try to ensure consistency.[5] The forms have been in use since 2007 in Scotland, so there should be good information available to correlate scores with monitoring results.

Unfortunately many of the questions are ambiguous or somewhat limited. For example, one asks if there is "evidence of wild life?" This will always be a yes, if insects and earthworms are included and a yes will make the source "high risk". Should the question therefore refer to mammals and at what distances would you expect them to be discounted in the assessment? Local authorities do not have an army of geologists, geo-engineers or hydrogeologists at their disposal, so guidance needs to be clear and useful. As a working hypothesis, perhaps we should assume that "evidence of wildlife" means animal droppings, burrows, etc. within about 15 metres, unless it is particularly interesting geology. All risk assessments are different, but why bother asking a question if the answer is always yes.

## MONITORING

An increased range of parameters has been introduced to reflect EU standards for mains water, with a sensible, reduced number for small domestic-only supplies. LA's can exclude certain of the audit parameters for large and commercial supplies if they are unlikely to be present. It is important therefore that LA's identify these in a scientific manner so as to reduce analysis costs to a minimum, whilst retaining a safety driven monitoring approach. Many LA's may need assistance organising this.

Although not commonly carried out at present on private supplies, testing for residual chlorine should always be carried out prior to bacteriological sampling, to make sure the private supply is not actually a mains supply and to see whether a shot dose of chlorine has been "secretly" added to tanks to adjust the microbiological results before the sampler arrives. Where on-site residual chlorine sampling is undertaken, LA's need to ensure they have a system of analytical control that is checked by a person "not under their control" and "approved by the Secretary of State" (Schedule 3, part 1 section 1 (a) and (b)). Again, most will not yet have such a system in place.

There are three official guides to sampling – one in the official Technical Manual guidance document[6], another is a field guide written by the Northern Ireland Office, also on the Technical Manual guidance web site[7] and the third is Microbiology of Drinking Water (2010) part 2 – Practices and Procedures for Sampling, often known as the Blue Book).[8] Does any one of them take preference over the others? And should samplers, to be competent (a legal requirement), be fully conversant with every one?

As samplers employed by water utilities are trained and assessed regularly, I often recommend that local authorities contact their water undertaker to either attend a training session or accompany a sampler for a day. Water undertakers usually have a good relationship with their local authorities and this arrangement can easily be organised.

## TURBIDITY CHECKS

Any private water supply with any form of treatment is classed as having a "treatment works". In the official guidance, nitrite and turbidity, samples must be taken from the water leaving treatment works[9]. This does not seem to reflect any requirement in the private water supplies regulations. It is very important that turbidity at a treatment unit such as UV is within its operating efficiencies. The standard for turbidity at the tap is 4 NTU (Schedule 1, part 1). In part 2 of Schedule 1 the turbidity standard is 1 NTU but only where there is "influence by surface water". Although it does not seem to be in these regulations, I presume this is also the standard for water leaving the treatment works?

## REGULATION 5

Regulation 5 is somewhat of a challenge. All substances and products used in private water supplies should now be approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.[10] The day before they were introduced, private water supplies were specifically excluded from regulation 31. At that time no installer of private water supplies treatment could actually install a system that complied. When I contacted several installers, importers and manufacturers they all said that they could not comply with this regulation. One exception was a manufacturer who said that his equipment did not need to comply. He said that the Water Fitting Regulations only applied to buildings and his equipment always went into sheds! Guidance entitled "Regulation 5(1)1 – Use of products or substances in private water supplies" on the DWI website[11] states that materials presently used in private water supplies without known health risk will be deemed to be satisfactory for the next 10 years. This is very welcome news. To utilise this exemption, it seems manufacturers and installers are expected to apply for inclusion on a DWI list. As of 11th May 2011 the list had no entries.[12]

## REGULATION 5.2

Regulation 5.2[13] says the "relevant person" must design, operate and maintain the disinfection process so as to keep disinfection by-products as low as possible without compromising the effectiveness of the disinfection. According to DWI at a meeting in January of this year, single property supplies are exempt from this regulation. However, even people responsible for commercial site treatment systems may be at somewhat of a loss to explain to the local authority how they do this. I have recently been told by a caravan site owner that the reason why a drinking water storage tank had no lid and was open to the elements was that UV was a water treatment system and UV came out of the sun for free.

## REGULATION 5.3

Regulation 5.3 states that "verification of effectiveness is required for removing or rendering harmless ... every pathogenic micro-organism and pathogenic parasite". How does the householder verify effectiveness of treatment for, for example, cryptosporidium, unless they monitor for it on a frequent basis? If they do not do this, and the huge majority will not, what is the local authority expected to do about it? Where treatment systems are serviced at regular intervals can this be classed as "verifying" and how does the LA assess the competency of the maintenance engineer? Also, how do you assess competence of the installer, if they are not part of the Water Companies' approved plumber scheme or are members of the UK Water Trade Association?

## PRIVATE DISTRIBUTION NETWORKS

These are causing a great deal of worry to many local authorities. The regulations are short and precise – they say:

*"Where water is supplied by a water undertaker or licensed water supplier and is then further distributed by a person other than a water undertaker or licensed water supplier the monitoring must be carried out on the basis of the risk assessment".*

Once this definition is satisfied, the PDN is covered by these regulations and it must be risk assessed 5-yearly (at least) and accompanied by monitoring for substances identified as a potential problem by that assessment. However short and sweet this definition is, it raises more questions than it answers. Leaving aside the question of what level of training, experience and ability risk assessors will need to be able to perform these duties inside large building complexes, most of these systems are already covered by the Water Fittings Regulations[14] and the H&SAW etc. Act 1974.[15] They will have had legionella risk assessments, and Water Undertakers are responsible for water fittings and monitoring these in buildings. DWI guidance gives examples of what may or may not be PDN's but there is a lack of clarity on how these decisions are arrived at.

Do the problems over the definition and deciding exactly what is and what is not a PDN have anything to do with the Water Fitting Regulations taking precedence, as they were made statute before the PWS regulations?

According to WRAS industry guidance,[16] "water fittings" include all pipes, pipe fittings, joints, valves, cisterns, appliances and equipment which form the water supply system in premises or are connected to it". They also state that the regulations apply to "all types of premises and to all plumbing systems, pipes above and below ground, water fittings, appliances and equipment which is supplied, or is to be supplied with water from the public supply" – in which case what is left that needed to be classed as a PDN? Obviously caravan sites and army depots are PDNs but these are not the problem for local authorities, it is the decision as to where the cut-off point is between PDNs and non-PDNs (multi-use high-rises, shopping centres, etc.) and why is there a perceived difference between the wording of the legislation and the official guidance?

There is also no official risk assessment form for private distribution networks, so how do we ensure consistency? In contrast to all the other types of private water supplies (where use of the official form appears almost mandatory) we have yet to see an official risk assessment form or matrix to help with the PDN assessment and decision making. Although this might seem academic, LAs are under a great responsibility to reduce costs (which means staff) and they should only be carrying out work where there is a real need and a real risk.

What health benefits accrue from, a mains-water-supplied university com-plex, with third party businesses such as coffee franchises being risk assessed on a 5 year monitoring programme by a LA technical officer? The word nugatory springs to mind. Is it not more likely that any potential problems will be picked up by more suitably trained personnel either from the university or the Health and Safety Executive?

Compared with the risks associated with a normal private water supply, PDN assessment seems a less than useful use of an environmental health department's time. The DWI assembled a group of stakeholders to discuss this issue and further guidance is expected shortly. It's a pity that this was not available 18 months ago when the regulations came into force.

## THE GLEE CLUB

There appears to be no plans for official training programmes on competency of sampling, or risk assessment, the water fittings regulations or, at the moment, private distribution networks. It has fallen to organisations like the RH Environmental in conjunction with the CIEH to provide low cost training courses and a series of successful regional training days have been provided across the country. These are now developing into bespoke and focussed training days covering particular issues pertinent to front-line officers. A forum for discussions and information sharing has also organically grown where LA staff share questions and problems.

Members ask questions when they come across a problem and the group members reply. The answers are co-ordinated and sent out. The Q&As then get posted in a library. Known as the Private Water Supplies Mutual Support Group and Glee Club (or the Glee Club for short) it has over 200 members across England and Wales who share information and provide support. It started when the author was at Bradford Council but is now hosted by RH Environmental. A record of previous questions and their answers is on a web site at www.rhenvironmental.co.uk and further information can be obtained about joining via the web site or an e-mail to the author at *davidclapham@rhenvironmental.co.uk.*

## REFERENCES

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2. Clapham D (2004) Small Water Supplies: A Practical Guide. Spon Press, London and New York.
3. *http://dwi.defra.gov.uk/stakeholders/guidance-and-codes-of-practice/pws-milk.pdf*
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14. *http://www.legislation.gov.uk/uksi/1999/1148/contents/made*
15. *http://www.legislation.gov.uk/ukpga/1974/37*
16. *http://www.wras.co.uk/PDF_Files/Holiday%20parks.pdf.*

FWR Water Supply
the information centre for water, wastewater and related environmental issues

# Private Water Supplies

## The New Regulations

## 18 Months on

## Royal Society for Public Health, London

## 18 May 2011

**by Mike Waite**

**THE CONFERENCE WAS A FOLLOW-UP TO THE SIMILAR CONFERENCE HELD A YEAR PREVIOUSLY BY THE RSPH AND WAS AGAIN SPONSORED BY FWR.**

**The 47 delegates came from a wide variety of backgrounds including Local Authorities, Water Companies, Industry and Health Professionals.**

**The meeting was ably chaired by David Clapham as one of his final tasks before retiring from his role in the Environmental Health Department of Bradford Metropolitan Council. In his brief introduction he referred to the continuing difficulties being encountered in interpreting and implementing the PWS Regulations despite their having been 10 years in preparation.**

The first presentation, given jointly by Liam Cooper and Jodie Wilson outlined the problems in implementing the Regulations at large temporary public gatherings. They described their experiences with the Leeds and Reading Music Festivals, where temporary potable supplies had to be provided for up to 90,000 persons. The problems were exacerbated by the very short time between installation and use of the infrastructure and they emphasized the need for full planning and liaison with the festival organisers from the earliest opportunity. They were followed by Dr. Ric Horobin, who discussed the practicalities of borehole construction, problems in operation and issues affecting risk assessment. John Murphy then considered how to risk assess installed treatment systems with particular reference to UV and chlorination systems.

He stressed the importance of systems being operated and maintained correctly by persons who know and understand what is and should be happening, with a fascinating anecdote relating to an installation receiving caustic soda instead of hypochlorite for disinfection! He stressed the impact of colour, turbidity and flow rate on the efficacy of UV treatment and supported the application of water safety plans for private supplies.

Sarah Hetherington discussed the impacts and implementation of the Regulations in respect of the Armed Forces, for which inter alia Kelda operates 53 borehole sites and 82 private distribution networks. She described a risk assessment process based on analytical results, and source condition and maintenance. She reported on feedback obtained from six other large UK landowners who reported inconsistent relationships with, and reliance upon, LAs. All agreed that better guidance on the PWS Regulations was needed and what was provided should have been clearer and available sooner. The morning session was closed by Mike Hurst who described what to watch out for with large private water supplies, with reference to source protection, treatment, and distribution and storage.

The afternoon session opened with an excellent account by Susan Ashworth of her student project on the self-collection of water from the natural springs of the Malvern Hills. All the springs sampled yielded coliforms or E.coli on every occasion and yet of the over 200 persons questioned when collecting water, often in an unhygienic manner, only 6.1% were concerned about the bacterial contamination of the water, although 85% drank the water without any further treatment. Over 40% fed the water to children under 6 or adults over 65 who would be most vulnerable to infection. Reasons for using the springs included the belief that the water was healthier and free of the contamination and chemicals in tap water.

Argyll and Bute has 1,617 PWS and offers grants up to £800 per premises for improvements. Patrick Mackie gave an illuminating account of the management of an outbreak of E.coli O157 on the island of Islay associated with an improved PWS receiving UV treatment. He described the actual and potential economic impact of the outbreak on the island, with some holiday accommodation being closed for 13 weeks. One contributing factor was the fouling of the UV lamp and failure to maintain it.

Gary O'Neill (Consultant) then gave an account of the operation of the Inset Appointment of Peel Water Networks to supply water to Salford Media City. He pointed out that an Inset Appointee is for Regulatory purposes a Water Undertaker and not a private supplier but many issues remain the same.

The final presentation on the next European Drinking Water Directive was to have been made by Professor Jeni Colbourne (DWI) but she was unable to attend and her paper was ably presented by Teresa Isaacs. The Directive will have no new or revised standards not already in train, but new reporting requirements are to be finalised by September 2011 and will cover all supplies both large and small. An update to Annex 2 may facilitate an extension of a risk-based approach to sampling.

*The speakers, from left : Patrick Mackie, Argyl and Bute Council, John Murphy, Springhead Water, Jodie Wilson, Reading Borough Council, Liam Cooper, Leeds City Council, Dr Gary O'Neill, O'Neill and Parry Ltd, Sarah Hetherington, Kelda Water Services, Mike Hurst, Watermark Consultancy and Teresa Isaacs, Drinking Water Inspectorate.*

*Mike Waite, FWR, (Left in third row) and other delegates at the meeting.*

*David Clapham chairing the meeting.*

*Dr. Ric Horobin, Zenith International*

*Susan Ashford, University of the West of England*

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# FOR THE HEALTH OF THE NATION:

## Securing, maintaining and communicating the vital water services that power our communities

### Institute of Water Annual Conference and Exhibition, Swansea

**12 - 14 May 2011**

**by Neil Tytler**

**FWR ATTENDED and had a stand at the Institute of Water Annual Conference and Exhibition at the Liberty Stadium, Swansea.**

It was attended by over 160 delegates and featured presentations from Welsh Water, Scottish Water, Northumbrian Water, Northern Ireland Water, Portsmouth Water, Wessex Water, Water Aid, NHS, DWI, CC Water, Water UK, Hyder, NDA Wales, and the Energy and Utility Skills Council. All the presentations were very good but the ones that were most memorable were those by Craig Murray, a graduate from Scottish Water, on the project to improve the water quality in the River Clyde by raising the dissolved oxygen levels in the river. Jeni Colbourne, Chief Inspector for the DWI, gave a good paper on the need for the water industry to treat people as customers and not just consumers.

This followed a theme developed previously by Ronnie Mercer, Chair of Scottish Water. Another presentation that left a lasting impression was that by George Butler, NI Water, who gave an account of the major difficulties experience in Northern Ireland during the winter of 2010. He discussed the major challenges for communication with customers, trying to meet the excessive demands of the media and coping with the involvement of politicians all whilst trying to restore the system. He finished with some strong advice that delegates may wish to revisit their corporate risk register!

Presentations from the Conference are available for download at the IoW website: *(http://www.instituteofwater.org.uk/events/Events.php?arch=1&eventID=548).*

Winners of the Annual Business Skills for the Water Industry 2011, supported by EU Skills, were announced during the annual IoW President's Dinner, held at the impressive Brangwyn Hall. EU Skills (The Energy & Utility Skills) is the Sector Skills Council (SSC) for the gas, power, waste management and water industries, licensed by Government and working under the guidance of the UK Commission for Employment and Skills (UKCES). Their purpose is to ensure that the industries have the skills they need now and in the future.


Neil Tytler from FWR is showing our recently revised ROCK on copper corrosion in plumbing systems to Charlotte Lee and Daniel Boyce from Bristol Water.

Lynn Cooper (right), Institute of Water Chief Executive presents the CPD Award to Jeanette Sheldon from DWI. This award is given to an employee in the water industry who has demonstrated an effective approach to their own personal development.

Tim Balcon (right), EU Skills Chief Executive presents the Business Skills Award, sponsored by EU Skills, to Allan Warren (left) and Gary Roberts from Severn Trent Water Ltd who designed a 'Customer Services Strategy' for their Customer Services Department.

Winners of the awards were announced at the annual Institute of Water President's Dinner at Brangwyn Hall, one of the principal cultural locations in Swansea.

*(Photographs courtesy of the Institute of Water)*

FWR Wastewater
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# Anaerobic Digestion

## unlocking assets and getting more for less

**Dr Tim Evans,** *FWR Wastewater Section Co-ordinator*

**ANAEROBIC DIGESTION (AD) has been flavour of the month in the UK for some time but it was not always thus. AD provides continuous renewable energy irrespective of weather or time of day. For years policy makers seemed to struggle with whether AD provided renewable energy or recyclable organic matter before eventually accepting that it did both. Their current dilemma seems to be the classification of that recyclable organic matter (the digestate) depending what went into the digester – as if the earthworms care. Again it is a totally false dichotomy.**

It would be far better to define the output and loading rate specifications and leave industry to work out how to achieve them.

Building new infrastructure is expensive and siting is often controversial, which leads to planning delays. Wastewater treatment works (WwTW) have treated sewage sludge by AD for about 100 years and used the biogas (65% methane, 34% carbon dioxide and 1% other gases) to heat boilers and run engines to generate electricity or compress air for the activated sludge process. This is all well established.

The FOG to biodiesel pilot plant at Oceanside WwTW with the digesters in the background.

For the last 20 years, research and development has focussed on increasing the biogas yield, particularly from the waste activated sludge by hydrolysis and by mechanical disintegration. Some of these technologies have increased the effective treatment capacity of existing digesters.

In 2005 65% of the sewage sludge in the UK was treated by AD; by 2015 this will have increased to 85%. Research attention has also been paid to reducing the numbers of pathogens and of indicator organisms (E. coli or faecal coliforms). Recently there has been concern that the number of indicator organisms can increase by 2, 3 or more orders of magnitude following dewatering.

This does not apply to extreme techniques such as thermal hydrolysis, but it does to most other pretreatments. Research using PCR (polymerase chain reaction method) has shown that pre-treatment at 70 ºC renders indicator organisms viable but non-culturable so they are not enumerated by the test methods but dewatering, especially centrifuging, makes them culturable again. Fortunately Salmonella and other pathogens are killed, their numbers do not change with dewatering. However this quirk with the indicators affects legal compliance, even if it does not really indicate increased risk.

The threshold for financial viability for digesting sewage sludge is about 100,000 people. Sludge treatment centres have been selected at WwTW where the indigenous sludge together with sludge trucked in from smaller works is digested. In the case of food waste digestion the financial threshold is about 30,000 tonnes/year, which coincidentally is the amount that a population of about 100,000 people would produce. Clearly, for a town of 50,000 people it would make financial sense to co-digest the food waste and the sewage sludge rather than trucking both to centres where there is sufficient mass. Co-digesting materials at WwTWs also has the benefits that they are close to population centres (so haulage distances are short), there is capability to treat process liquors and that they are adapted to truck traffic. There is even a synergistic benefit of co-digestion, i.e. the biogas yield exceeds separate digestion. Research shows the global warming potential of conveying kitchen food waste to AD is the same whether by food waste disposers and sewers or kerbside collection and trucks but that the former is considerably less expensive.

Denmark made centralised co-digestion part of its renewable energy strategy in about 2002. A sophisticated market of tiered gate fees developed that was related to the biogas potential of a waste and the ease of treating it. The price of selling electricity was similar to the subsidy-supported price in the UK but in Denmark's case the subsidy was for non-centrally generated electricity. The centralised digestion facilities were financially viable because they attained the necessary economy of scale by being able to co-digest. Very sensibly (because it is soil processes etc. that we are trying to protect), the Danish government applied the same rules to all digestate used on farmland, irrespective of the origins of the feedstocks.

Co-digestion is a hot topic in the USA. 17 of the 90 papers at the Water Environment Federation's 2011 Residuals and Biosolids Conference and a whole specialist workshop addressed co-digestion of sewage sludge, food waste and other residuals, including grease trap waste. San Francisco Water is stimulating collection of fat, oil and grease (FOG) as part of its strategy for preventing FOG blockages in sewers. This includes studying the feasibility of producing fuel from FOG with Black Gold Biodiesel at its Oceanside WwTW (see Figure left). The pilot plant, which is sized for 400 m3/year, is producing biodiesel, No. 6 fuel oil and a small amount of solid residual that can be burnt in cement kilns, etc. Black Gold Biodiesel considers that a full size 4000 m3/year plant would have a ROI of 3 to 5 years. The footprint of a full-sized plant would not be very much greater than the pilot. Stimulating FOG collection and treatment is helping to prevent FOG accumulations in San Francisco's sewers.

Research on samples of FOG collected from around the USA has revealed an intriguing mechanism. Irrespective of the regional cuisine, FOG samples were dominated by saturated fatty acids reacted with calcium. The postulated theory is that FOG hydrolyses to water-soluble free fatty acids; the saturated ones react with calcium in the presence of some iron to form insoluble soaps. Hydrolysis could be chemical (mediated by temperature, detergents etc.) or biological. Large passive grease traps could very well be hydrolysis reactors, which is consistent with the pragmatic development of progressive FOG control utilities, such as San Francisco (which claims to have on of the highest concentrations of food service establishments in the world), that favour active traps that separate the fat from the water as quickly as possible, that reduces the time for hydrolysis.

Consistent rules based on sound science derived from the fate and transport of hazardous substances rather than arbitrary segmentation on the basis of feedstock and arbitrary quality limits would give much better value to UK citizens and achieve more renewable energy and organic resource recycling without compromising environmental protection.

FWR Water Framework Directive
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# IMPROVING OUR RIVERS

**During the past few months there have been important developments to improve the health of our rivers, lakes, streams and other waterbodies, to facilitate the Programme of Measures as set out in the RBMPs and to help to protect, restore and improve our natural environment.**

Chris Ryder, Head of Water Quality, Defra, introduces Chris Smith, Chair Environment Agency (left), the Environment Minister Richard Benyon (right) and Poul Christensen, Chair Natural England (far right) at the Forum.

## Minister Launched Catchment Management Approach for River Basin Management at the Defra Water Stakeholders Forum

**AT THE LAST DEFRA WATER STAKEHOLDER FORUM** meeting in London on 22 March 2011, the World Water Day, the Environment Minister Richard Benyon announced additional actions that will be put in place to help in achieving the WFD objectives. The Government believes that more action is desirable at the catchment level, taking a more proactive approach to bring stakeholders together.

This will start to be delivered by the Environment Agency by developing and starting to implement at least 10 catchment plans by 22 December 2012. It is envisaged that other key stakeholders, such as the River Restoration Trust (RRT), other NGOs or local authorities would lead and drive action in the other more than 90 catchments in England The Environment Agency will lead the following 10 catchment projects:

- River Irwell – North West
- River Ribble – North West
- River Welland – Anglian
- River Leam – Midlands
- River Ecclesbourne – Midlands
- Lower River Wear – Northumbria
- River Don – Yorkshire
- Lower River Lee – South East
- River Adur and Ouse – South East
- Upper River Tone – South West

In August 2006 and August 2008 Defra published volumes one and two of the River Basin Planning Guidance to the Environment Agency, respectively. Defra, in consultation with the Welsh Assembly Government, intends to review and consolidate it, also to include guidance on the catchment approach, and reissue it as a single volume in 2012/13.

## Defra announced £110 Million Revamp for England's Rivers.

**FOLLOWING THE LAUNCH OF THE CATCHMENT MANAGEMENT APPROACH** at the Water Stakeholder Forum last month (see below), on 13 April 2011 the Environment Secretary Caroline Spelman announced a £110 million revamp, which will bring more otters, salmon and other fish back to England's rivers. The money will be used to kick start restoration worth at least £600 million to improve the health of more than 880 lakes, streams and other water bodies, while boosting local involvement.

The funding will be shared between the Environment Agency, Natural England and civil society associations such as the Association of Rivers Trust to build on successful work, and a significant portion of the funding will support new local projects across the country through a Catchment Restoration fund. £92 million will be provided over the next four years to remove non-native invasive weeds and animals, clear up pollution, and remove redundant dams, weirs, landings and other man-made structures so that wildlife can thrive in water catchments across England.

Funding from the Catchment Restoration fund will be available from next year to co-fund projects that restore and protect the health of our water catchments by bringing together those responsible for causing pollution, with those who want to see cleaner waters and the agencies that provide scientific evidence to base decisions on.

An additional £18 million will be provided this year to continue providing help to farmers to put in such measures as buffer strips and fences to protect water courses and take other action to prevent agricultural pollution, under the successful Catchment Sensitive Farming programme.

**Just published:**

# 'The Natural Choice'
## The Natural Environment White Paper

On 7 June 2011 Environment Secretary Caroline Spelman launched the new White Paper. The proposals set out a detailed programme of action to repair damage done to England's natural environment in the past, and urges everyone to get involved in helping nature to flourish at all levels – from neighbourhoods to national parks. The plans are contained in 'The Natural Choice', the first White Paper on the natural environment in 20 years, and are directly linked to the groundbreaking research in the UK National Ecosystem Assessment (UK NEA) published last week that showed the strong economic arguments for safeguarding and enhancing the natural environment. *(http://uknea.unep-wcmc.org/)*

Alongside the White Paper, the Government has published its response to the Lawton Review. The Review, Making Space for Nature, found that nature in England is highly fragmented and unable to respond effectively to new pressures, such as climate and population change. The Government's response reflects evidence in the UK NEA , and builds on outcomes of the Convention on Biological Diversity in Nagoya in October 2010.

**For more details and to read the White Paper and press release visit the Defra website:**
*(http://www.defra.gov.uk/environment/natural/whitepaper/)*

Ivana Wilson

Foundation for Water Research
the information centre for water, wastewater and related environmental issues

# An update on the activities of the FWR

***Caryll Stephen***
*Chief Executive of the Foundation for Water Research*

As you will see this Newsletter is focussing on private water supplies and we are grateful to David Clapham for writing our lead article. Our other three sections, Wastewater, WFDIC (Water Framework Directive Information Centre) and Library have also continued to be very active. Two further ROCKS have been updated and a new ROCK has been produced (see details below). Further FWR publications are currently in progress.

FWR consultants have again been out and about attending the RSPH (Royal Society for Public Health) Conference in May and manning a small stand at the Institute of Water Annual Conference also in May in Swansea. Future events include attendance at the FIPS (Faecal Indicators: problem or solution?) 2011 conference in Edinburgh in June and the Waterways Festival organised by the Inland Waterways Association at Burton on Trent at the end of July. In addition we are due to exhibit at a number of the WSW (Water, Sewerage & Waste) exhibitions around the country. Again a busy few months ahead are envisaged.

Library
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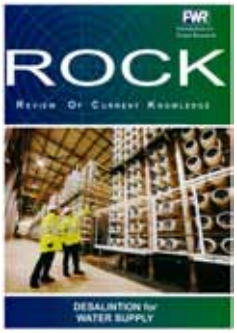
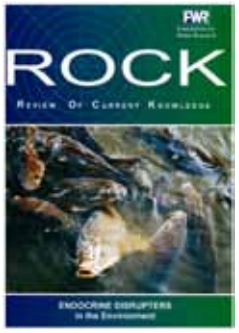
# New FWR publication

New revisions of two FWR ROCKS (Reviews of Current Knowledge) and one new ROCK are in the final stages of preparation and should be available soon. The reports will be posted on our website and may be viewed via our FWR website: (http://www.fwr.org). Copies of the ROCKS are obtainable from the Foundation, price £15.00, less 20% for FWR Members.



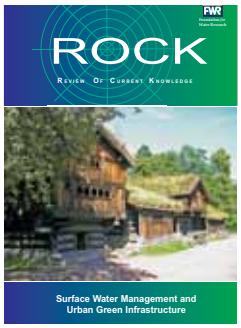

**Updated FWR ROCK FWR/R0013**
**Desalination for water supply**

The scarcity of existing fresh water supplies is becoming a problem in many parts of the world. In some areas a process called "desalination" is used to reduce the salt content of brackish and sea waters to turn them into a drinkable supply. This review explains what makes water drinkable, the various processes used for desalination and their costs compared with the costs of conventional water supplies.




**Updated FWR ROCK FWR/R0003**
**Endocrine disrupters in the environment**

Endocrine disrupters are chemicals that may interfere with hormone systems. Some effects have been seen in certain marine and freshwater organisms, such as fish downstream of sewage treatment works. The review explains what endocrine disruption is and which chemicals have been questioned. There is a discussion of the risks for the environment and for human health compared with other commonly encountered risks.




**New FWR ROCK FWR/R0014**
**Surface Water Management and Urban Green Infrastructure** – A review of potential benefits and UK and international practices

This ROCK presents the elements of green infrastructure (GI), its benefits, its limitations and the principles of implementing GI in relation to stormwater management. The synergies with surface water management in urban areas are illustrated with case study examples.

# SNIFFER Reports:

SNIFFER, the Scotland and Northern Ireland Forum for Environmental Research, manages and publishes research addressing knowledge gaps relating to environmental issues. s.

The reports are available in pdf format on the SNIFFER website *(http://www.sniffer.org.uk)*. CDs **(£20+VAT)** or printed copies can be ordered from our FWR website *(http://www.fwr.org)* or by e-mail: *office@fwr.org.uk*. You can purchase the reports through our secure Online Purchasing system. The following new reports are now available from FWR:

- **ER27** - Raw Materials Critical to the Scottish Economy (£50.00).

## FWR publications in preparation:

Later in the year we are planning to publish a revision of the FWR ROCK on sewage sludge disposal (FR/R0001), a new ROCK on floods and a FWR Guide on water supply management.



*Design Agency - http://www.connellmarketing.com*

**Foundation for Water Research**
Allen House, The Listons, Liston Road,
Marlow, Bucks SL7 1FD.
**T** : +44 (0) 1628 891589
**F** : +44 (0) 1628 472711
**E** : office@fwr.org.uk
**W** : www.fwr.org

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