WATER UK
Standards Programme

Topic I. Water – Drinking Water Quality

Long Term Objectives for Topic – see Project Plan below for details	Responsible Water UK Policy Advisory Group and contact
I.1. To ensure that water companies can procure products that provide consumer safety (for the product lifetime) and are cost-effective.	Drinking Water – Jim Marshall Environment - Sarah Mukherjee Economic Regulation and Market Reform – James Bullock
I.2: Ensure water industry is best served by developments in the microbiological testing of drinking water.	Drinking Water – Jim Marshall Environment - Sarah Mukherjee Economic Regulation and Market Reform – James Bullock
I.3: To ensure that the water companies are adequately briefed on the implications of changes to regulations and practice.	Drinking Water – Jim Marshall Environment - Sarah Mukherjee Economic Regulation and Market Reform – James Bullock

1. Details of objectives

Topic	Drinking Water Quality	Sub-topics	UK regulations, European regulations, effects of materials and products on water quality, organic chemicals, inorganic chemicals, toxicology, microbiology, sampling and analysis, approval testing, impact on the environment.

The topic can be divided into the following key stages:

Effect of materials on drinking water quality	The development of practical and reliable procedures for testing materials and products used in contact with drinking water that eliminate problems due to toxic substances, enhancement of microbial growth and organoleptic aspects, such as occurrence of tastes and odours.
Microbiology	Development of robust and reliable methods for the microbiological examination of water and related materials.
Determining water quality	Sampling/testing/analysis

Current UK practice

Effect of materials on drinking water quality

Water suppliers need to be able to procure products to be used in contact with drinking water that are safe (for the product lifetime) and cost-effective. Current UK practice to ensure this includes:

- Two approval procedures cover most products made from organic materials (such as plastics and rubbers) and many cementitious materials.
    - Products to be used in water supply must comply with UK Water Supply (Water Quality) Regulations i.e. approval by the Secretary of State via the DWI..
    - Materials used inside buildings must comply with UK Water Supply (Water Fittings) Regulations and WRAS guidance. Testing to BS 6920.
- Metallic materials, in relation to effects on drinking water quality, whether as a single product (such as a pipe) or part of a product (such as a water meter) are not covered by the same degree of national regulation and are not normally approved by means of testing against BS standards. Such materials tend to be covered by a variety of codes of practice based on experience (or tradition).
- Normally, products approved for use in water supply are not audited after approval.
- Water suppliers operate a variety of in-house schemes to ensure that only appropriate materials and products are installed.
- The main standards for this area (such as BS 6920) are developed by BSi Committee EH6.

Approval is based on an assessment of the migration of ingredients, impurities and, if appropriate, reaction products, their toxicity, likely consumer exposure and the overall risk-benefit. The possibility that a material or product could lead to problems associated with organoleptic aspects (such as tastes and odours) or enhancement of microbial growth is also covered by testing.

- Lists of approved products for water supply are published by DWI.
- Materials and products approved in other countries must be re-tested by the UK schemes before they may be used.
- Current UK procedures have been developed on the basis of collaboration among the water industry, regulators, industry and technical experts. The aim is to issue standards that are practical, cost-effective and safe (for the product lifetime).
- It is not clear how related aspects such as permeation of plastic pipes and disposal of products at the end of their working life (such as PVC piping) are dealt with in the water industry.
- Assessment of corrosion behaviour is currently not addressed.

Microbiological testing of drinking water

- Methods for microbiological testing largely involve culture-based techniques. Standing Committee of Analysts panels, on which individual water companies are well represented, produce best practice manuals. The water industry generally responds well to new developments.

Determining water quality (sampling/testing/analysis)

- DG Environment are considering changes to DWD which could impact on this area

Current issues and pressures

Effect of materials on drinking water quality

- The original EAS, a single, mandatory European approval scheme - supported by the Construction Products Directive (CPD), will not proceed. Currently, the possibility of an alternative EAS, based on mutual recognition is being considered by some Member State regulators. The impact of the outcome of this on the need for testing standards (in Europe or UK) will need to be assessed. Clear and regular communication from the CEN Rapporteur for Water who is part funded by Water UK is needed in order to make appropriate decisions.
- Pressure from manufacturers for single system of approval (such as the original EAS): Member states operate different systems for approving materials and products intended for use in contact with drinking water. Normally, member states refuse to accept an approval made in another member state - this is deemed to be a barrier to trade. The CPD aims to remove technical barriers to trade by means of either mutual acceptance or harmonisation of procedures. Removal of these barriers under CPD is expected to lead to cheaper products. The CPD is to be replaced by a Construction Products Regulation. The impact of this on this topic area will need to be assessed.
- CEN are developing harmonised standards to support an EAS. The changes to the EAS referred to above mean that the implementation and use of these standards may be affected.
- An EAS (regardless of its precise nature) will include new procedures. There are a number of issues relating to this:
    - It is imperative that these procedures reflect the UK requirements and that the standards and regulations that support an EAS are practical and cost-effective. Over complicated and unnecessary standards/procedures should be avoided. For example, the EAS included ‘chlorine demand’ but the UK does not want this assessment.
    - The new standards/procedures must allow new products to emerge and all products approved by an EAS must be ‘safe’ for the product lifetime.
    - The UK wants GCMS assessment of unsuspected substances to be included in an EAS.
    - An EAS will include full regulation of metallic products. This is a major change to UK (and all member state) practice. It cost implications are not yet known.
- The current Drinking Water Directive calls for member states to install procedures to ensure that products used in contact with drinking water are safe but does not say how this should be done. Currently, there is pressure to change the Directive so that specific mention is made of an EAS. This development needs to be monitored to ensure that sensible reference to an EAS is made.
- The production of CEN standards for water safety plans following revision of the Drinking Water Directive.
- The UK standard procedure for testing the impact of materials on microbial growth is well established, robust and generally reliable and served the industry well. Research is currently underway to produce a standard that uses a different method of

measurement. This should not impact on water industry operations provided the performance criteria between the two methods are standardised.

- There is concern in some quarters that test methods for materials do not adequately address the issue of legionella growth on surfaces. This concern needs to be examined.

Microbiological testing of drinking water

- WHO is actively developing Water Safety Plans managing supplies from source to tap as well as for water in buildings? The UK regulator is very keen on the WSPs, which are likely to see more emphasis placed on ensuring processes work properly rather than use routine monitoring for safeguarding water quality.
- Considerable research activity is going on to develop molecular methods specifically to target pathogen detection. These are a long way from being reliable and robust and much less so being available as standard methods.
- Much is being done to address the need for detection and enumeration of viruses in water and related materials.
- The UK is devoid of standard disinfection practice.

Determining water quality (sampling/testing/analysis)

- Priority substances – environmental and chemical investigations.

Long-term objectives

Objective I.1: To ensure that water companies can procure products that provide consumer safety (for the product lifetime) and are cost-effective.

Protect the current standards for testing and approval of products by ensuring:

- Water industry requirements are included in UK standards;
- Water industry requirements are maintained in the European Standards so that procedures are practical and cost-effective;
- UK requirements are maintained in an EAS so that products approved by an EAS are safe for the product lifetime;
- Compatibility of an EAS with the Drinking Water Directive;
- Satisfactory implementation of the EAS in the UK;
- Anticipate likely changes to the Drinking Water Directive

Objective I.2: Ensure water industry is best served by developments in the microbiological testing of drinking water.

Ensure water companies are aware of new and emerging technologies and assess their likely impact on water industry testing.

Objective I.3: To ensure that the water companies are adequately briefed on the implications of changes to regulations and practice.

Ensure water company purchasing departments and product specifiers are fully aware of the implications of changes to European legislation covering drinking water quality through:

- Monitoring of developments;

- Development of clear guidance on specifying to standards is available;
- Suitable briefing of procurement staff on guidance;
- Reviewing the need for commonality of procurement systems in relation to effect of materials on water quality.

2. Project plan to deliver each long-term objective

Objective/ Project	Potential collaborators	Topic Advisor, PAG and Contact	Project Activity	Specific activity in 2010/11 including Water UK Networks
Objective I.1. To ensure that water companies can procure products that provide consumer safety (for the product lifetime) and are cost-effective.				
I.1.1 Inclusion of water industry requirements in UK standards.		Jonty Stead Francis Rillaerts Drinking Water Jim Marshall	Attend BSi EH6 (Effect of materials on drinking water quality). Rep – Mike Fielding	Ensure Water Industry needs considered and CEN standards converted to BS standards satisfactorily. CPD replaced by Construction Products Regulation - assess impact.
I.1.2 Inclusion of water industry requirements in CEN standards.		Jonty Stead Francis Rillaerts Drinking Water Jim Marshall	Attend CEN TC 164/WG3 (materials v water quality). Rep – Mike Fielding	Ensure Water Industry needs considered. Mandate being revised by Commission.
			Attend CEN TC 164/WG3/ AHG1 (organoleptic assessment). Rep – Mike Fielding	Ensure Water Industry needs considered. Remove Chlorine Demand if possible. Revise existing ENs. Check reliability of some ENs.
			Attend CEN TC 164/WG3/ AHG2 (general migration). Rep – Mike Fielding	Ensure Water Industry needs considered. Revise existing ENs. Sort out issue of some Ens (parts 3 and 4) not covered by Mandate 136.
			Attend CEN TC 164/WG3/AHG 6 (cementitious products). Rep – Mike Fielding	Ensure Water Industry needs considered. Sort out exactly what products are 'mandated' for standards.
			Attend CEN TC 164/WG3/AHG 3 (microbial growth). Note: New Rep Required.	Ensure Water Industry needs considered. Ensure research results are properly built into ENs.

Objective/ Project	Potential collaborators	Topic Advisor, PAG and Contact	Project Activity	Specific activity in 2010/11 including Water UK Networks
			Attend CEN TC 164/WG3/AHG 7 (GCMS unsuspected substances). Note - No Rep	Ensure Water Industry needs considered. Ensure research results are properly built into ENs.
			Attend CEN TC 164/WG3/AHG 5 (metallic materials). Note - No Rep	Ensure Water Industry needs considered. Clarify purpose and impact of proposed ENs.
I.1.3 Inclusion of water industry requirements in an EAS (Regulations).		Jonty Stead Francis Rillaerts Drinking Water Economic Regulation and Market Reform Jim Marshall James Bullock	Monitor developments in an EAS.	Allocated to Drinking Water Quality Network: Ongoing monitoring and advise WI accordingly.
I.I.4 Compatibility of an EAS replacement with the Drinking Water Directive.		Jonty Stead Francis Rillaerts Drinking Water Economic Regulation and Market Reform Jim Marshall James Bullock	Monitor developments in an EAS replacement and advise WI accordingly.	Allocated to Drinking Water Quality Network: Ongoing monitoring and advise WI accordingly.

Objective/ Project	Potential collaborators	Topic Advisor, PAG and Contact	Project Activity	Specific activity in 2010/11 including Water UK Networks
I.1.5 Satisfactory implementation of an EAS replacement in the UK.		Jonty Stead Francis Rillaerts Drinking Water Economic Regulation and Market Reform Jim Marshall James Bullock	-	No immediate need, depends on progress of an EAS replacement.
I.1.6 Anticipate changes to DWD and implications for product testing.		Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	Monitor developments and advise WI accordingly.	Allocated to Drinking Water Quality Network: Ongoing monitoring and advise WI accordingly.
Objective I.2. Ensure water industry is best served by developments in the microbiological testing of drinking water				
I.2.1 Ensure water companies are aware of new and emerging technologies and assess their likely impact on water industry testing.		Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	Monitor developments and advise WI accordingly.	Allocated to Drinking Water Quality Network: Ongoing monitoring and advise WI accordingly.

Objective/ Project	Potential collaborators	Topic Advisor, PAG and Contact	Project Activity	Specific activity in 2010/11 including Water UK Networks
Objective I.3. To ensure that the water companies are adequately briefed on the implications of changes				
I.3.1 Implications of changes to European legislation (e.g. Directives and EC Decisions covering drinking water or chemicals to make products).		Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	Monitor relevant developments in European legislation.	Allocated to Drinking Water Quality Network: Ongoing monitoring and advise water industry accordingly.
I.3.2 Development of clear guidance on specifying to standards is available.	DWI, WRc	Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	Work with DWI to prepare clear guidance document.	No immediate need depends on progress of an EAS replacement.
I.3.3 Briefing of procurement staff on guidance document.	DWI, WRc	Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	Organise workshop if required (I.2.1)	No immediate need, depends on progress of an EAS replacement.

Objective/ Project	Potential collaborators	Topic Advisor, PAG and Contact	Project Activity	Specific activity in 2010/11 including Water UK Networks
I.3.4 Reviewing the need for commonality of procurement systems in relation to effect of materials on water quality.		Jonty Stead Francis Rillaerts Drinking Water Environment Economic Regulation and Market Reform Jim Marshall Sarah Mukherjee James Bullock	-	No immediate need, depends on progress of an EAS replacement.