



guardians of drinking water quality

## DRINKING WATER INSPECTORATE

Area 7e, 9 Millbank  
c/o Nobel House  
17 Smith Square  
London SW1P 3JR

Enquiries: 030 0068 6400

E-mail: [jeni.colbourne@defra.gsi.gov.uk](mailto:jeni.colbourne@defra.gsi.gov.uk)

DWI Website: <http://www.dwi.gov.uk>

28 June 2013

**To: Richard Benyon MP,  
Parliamentary Under-Secretary for Natural Environment and  
Fisheries**

I am pleased to inform you that my report on the quality of drinking water in England will be published on 11 July 2013.

*Drinking water 2012* is the 23rd annual report of the Chief Inspector of Drinking Water. It is published in seven parts with five of these covering public and private supplies in England. The report sets out the work of water companies, local authorities and the Inspectorate in safeguarding drinking water quality during the calendar year of 2012. In particular it covers the results of testing drinking water for compliance with the standards set out in regulations implementing the EU Drinking Water Directive. It also describes the actions taken to address failing samples, water quality incidents, consumer complaints and the remediation of potential risks to public health identified either by local authorities or water companies.

### Water supplies in England

In 2012, 27 water companies supplied mains water to over 52 million consumers in England. During the year there were changes in the water supply arrangements in England with three first time supplies being provided to new housing developments or commercial customers by SSE Water. Also in June a consortium led by Infracapital Partners and Morgan Stanley Infrastructure Partners purchased Veolia Water, which has been renamed Affinity Water. In addition approximately one million people living in England were reliant on 44,552 private water supplies and during the year, just over 3 million people in England attended festivals, shows and other cultural or leisure events that were served by a temporary supply of water.

### Drinking Water Quality in England

The good quality of public water supplies in England was maintained in 2012 with 99.96% of all tests meeting EU and national standards, the same figure as recorded in 2011, and the same as the figure for the water industry in England and Wales as a whole. The current very low

number of failures (0.04%) compares favourably to the much higher number of failures (1.6%) recorded by the industry in 1991, when regulation of drinking water quality was first introduced.

By comparison, the quality of private water supplies in England is unsatisfactory with 7.5% of tests failing to meet the EU and national standards in 2012. This figure has changed little from the 8.4% of tests that failed in 2010, the year when new private water supply regulations were made in order to address the poor quality of many of these small privately owned supplies in England. The new regulatory regime was considered essential to safeguard users of private supplies against recognised health risks. It was also required in order to bring England into compliance with the EU Drinking Water Directive.

There are 39 parameters tested for routinely in drinking water and in England, every test for 21 of these parameters gave satisfactory results in 2012. The table below records the remaining parameters in terms of whether the failures were in public supplies or private supplies or both. It also shows the failures in public buildings and how almost all of these are due to deficient private supplies. This is important because enforcement to improve failing supplies serving public buildings is a mandatory duty of member states and ministers need to be assured that local authorities are taking action on their behalf, a point I will return to later.

#### Parameters exhibiting one or more failure of a standard in England

Parameter	Failure(s) of the standard reported in 2012			
	Public water supplies		Private water supplies	
	Non-public buildings	Public buildings	Non-public buildings	Public buildings
Microbiological parameters				
<i>E.coli</i>	✓	✓	✓	✓
Enterococci	✓		✓	✓
Chemical parameters				
Aluminium	✓	✓	✓	✓
Antimony			✓	✓
Arsenic			✓	✓
Benzo(a)pyrene			✓	✓
Boron			✓	✓
Bromate	✓		✓	✓
Colour			✓	✓
Copper	✓		✓	✓
Fluoride			✓	✓
Iron	✓	✓	✓	✓
Lead	✓		✓	✓
Manganese	✓	✓	✓	✓
Mercury			✓	✓
Nickel	✓	✓	✓	✓
Nitrate			✓	✓
Nitrate – works			✓	✓
Nitrate/nitrite Formula	✓			✓

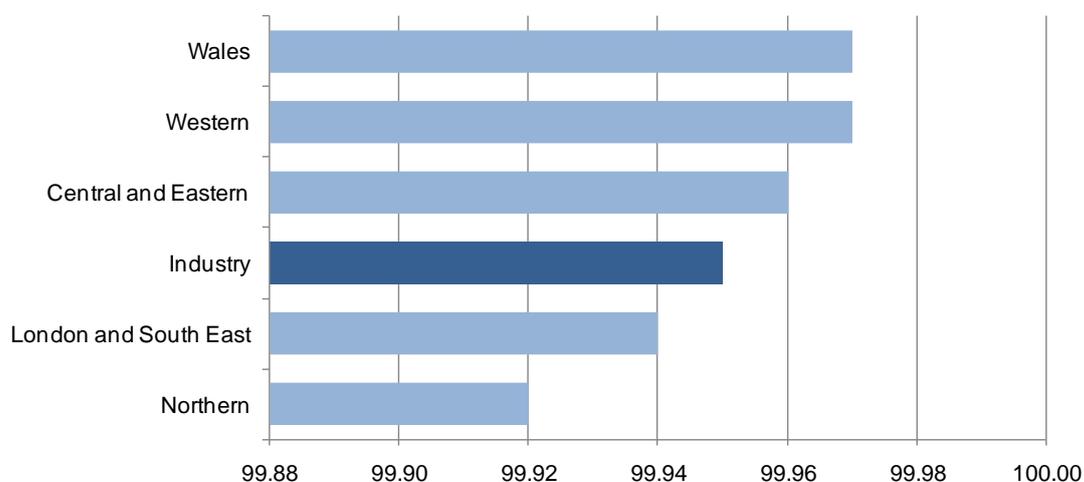
Parameter	Failure(s) of the standard reported in 2012			
	Public water supplies		Private water supplies	
	Non-public buildings	Public buildings	Non-public buildings	Public buildings
Nitrite – tap	✓		✓	✓
Odour	✓	✓	✓	✓
Taste	✓	✓	✓	✓
Pesticides				
2,4-D	✓			
Chlorpyrifos	✓			
Fluroxypyr	✓			
Glyphosate	✓			
MCPA	✓			
Mecoprop-P	✓			
Metaldehyde	✓			
Metazachlor	✓			
Propyzamide	✓			
Aldrin				✓
Heptachlor				✓
Heptachlor epoxide			✓	
Polycyclic aromatic hydrocarbons			✓	✓
Selenium			✓	
Sodium	✓		✓	✓
Tetrachloromethane			✓	
Total trihalomethanes	✓		✓	
Turbidity 4NTU				✓

### Water Industry Performance in England

The Inspectorate uses a range of indices to assess the water quality performance of water companies providing public supplies. These indices look separately at water treatment (process control and disinfection indices), service reservoir integrity and network maintenance. In 2012, the main change in the performance of companies in England was a decline in the service reservoir integrity figure (down to 99.95%). This downward trend was evident across all regions of the country apart from in the Western region where performance has been at the higher level of 99.97% for three successive years and where in 2012 there was further improvement by two companies in the region: South West Water (99.98%) and Bristol Water (99.99%). Service reservoirs are assets within the distribution system, which hold treated water. These are typically filled at night and drawn down during the day to enable consumer demand to be met; however, unless carefully managed and maintained, service reservoirs can cause deterioration of the quality of water, either because there is insufficient turnover of water or due to problems with the structural integrity allowing ingress of contaminants. Compared to last year an unprecedented number of companies (14) recorded a lower service reservoir integrity figure in 2012 and three of these companies (Affinity Water, Severn Trent Water, Yorkshire Water) exhibit a three year declining trend for this index. This raises questions about whether

there is a potential deficit in the level of service reservoir maintenance. The Inspectorate expects companies to ensure that adequate provision for maintenance of these essential assets is made in business plans bearing in mind that the consequences of not doing so would be an increase in the number of service reservoir related events impacting directly on consumers and water quality. For example in 2012 there were 21 events directly associated with service reservoirs, one of which was serious with consumers required to boil drinking water, and a further 14 were associated with unsatisfactory microbiological results.

### Service Reservoir Index in England



In 2012, there were more water quality events in England affecting public supplies (394 compared to 363 in 2011) with close to half being of a type that necessitated a detailed investigation by an inspector. The number of serious events also increased from two in 2011 to five in 2012: Severn Trent Water (3), South Staffordshire Water (1) and Southern Water (1). Some of these events are described more fully in the report because they offer wider learning points for the industry: one concerned an illegal cross connection between a privately owned borehole and the public mains supply, two related to inadequate water treatment and two involved ingress of contaminants to service reservoirs. Also during 2012, the Inspectorate concluded prosecutions of three companies in respect of five events that occurred in 2011: Severn Trent Water pleaded guilty to 16 charges and was fined a total of £76,000 with costs of £37,990 awarded to the Inspectorate; Southern Water pleaded guilty to one charge and was fined £12,015 with costs of £14,483 recovered by the Inspectorate; Northumbrian Water pleaded guilty to one charge and was fined £8,015 and required to pay Inspectorate costs of £14,488.

## Water quality events in 2012

Region	Risk assessment category (DWI)					
	Minor/not-significant		Significant		Major/serious	
	2011	2012	2011	2012	2011	2012
Central and Eastern	125	98	32	49	1	4
London and South East	51	70	38	33	1	1
Northern	23	16	47	69	-	-
Western	34	31	12	27	-	-
Wales	18	20	7	19	-	-
Industry	251	235	135	193	2	5
Note: four events affected both England and Wales in 2012						

To ensure the microbiological safety of public supplies, water companies are required to disinfect water at treatment works before supplying it through pipes to consumers. Disinfection can be achieved by any appropriate physical or chemical method, or a combination of the two. The choice of method will depend on a range of site-specific factors but an important consideration is the requirement to keep disinfection by-products (DBPs) to a minimum. This duty in the EU Drinking Water Directive was formally introduced into law in England in January 2010. The Inspectorate has made a general assessment of how well companies are meeting the DBP rule and whilst generally across the industry the picture is satisfactory, the evaluation identified that in 2012 there were 51 public water supply zones in England where the annual average value for a common DBP (trihalomethanes) was greater than one half of the standard. Most of these zones (46) are operated by just five companies: Southern Water (11), Severn Trent Water (11), South West Water (10), South East Water (8) and Yorkshire Water (6). The Inspectorate considers that these companies may not have taken all appropriate steps to minimise DBPs in these zones. Guidance has been issued to the industry on how the regulatory requirements relating to DBPs should be applied in the context of Ofwat's upcoming periodic review of water prices for the AMP6 period.

Water companies are required to assess the risk to drinking water supplies from pesticide usage in source water catchments and then test for those that might be present. In 2012, companies in England carried out 317,563 tests and only a small number of these (253) failed to meet the standard with most (232) being due to the presence of one substance, metaldehyde, the active ingredient in some types of slug pellet. To provide context to this issue, the report this year provides information about the extent to which this substance impacts on drinking water catchments. There are 2,269 raw water abstraction points used by water companies in England. Initial risk assessments by companies identified that close to one-third of these abstraction

points (684) might be at potential risk from metaldehyde. Subsequent raw water monitoring has further refined these risk assessments to show that the actual risk is confined at present to 104 abstraction points in England and a further 6 abstraction points located in Wales used to supply water to customers living in England. In relation to these at risk sources, companies are continuing to carry out modelling and other catchment work to share and promote best practice with all the relevant parties such as farmers, manufacturers, agronomists, environmental and pesticide regulators. Reports submitted by water companies to the Inspectorate in spring 2013 are being used to identify the extent to which voluntary initiatives are able to limit the impact of this substance on sources of drinking water and where other regulatory measures (relating to Article 7 of the Water Framework Directive) would seem to be necessary. The Inspectorate issued guidance to the industry on how the regulatory requirements relating to all pesticides should be applied in the upcoming periodic review of water prices for the AMP6 period in January 2013.

At the end of 2013, the new tighter standard for lead comes into force. The Inspectorate is content that water treatment is in place wherever this is required to reduce consumer exposure to lead and this thereby ensures compliance with the main provision in EU Drinking Water Directive. However, this does not mean that all tests for lead at consumers' taps will comply with the new standard from next year because water treatment, whilst beneficial, does not address legacy problems where owners of properties are reluctant to invest in replacement of old pipes and fittings. The programme of randomised regulatory monitoring involves water companies in testing around 12,000 properties a year and figures in this year's report show that going forward this will identify around a 100 properties each year where the standard is not met at the tap in a particular premises. The Inspectorate has issued guidance to the industry on how the regulatory requirements relating to lead should be applied in the upcoming review of water prices for the AMP6 period in January 2013.

#### Local authority performance in relation to private supplies

In 2012, local authorities in England improved the completeness and accuracy of the private supply records submitted to the Inspectorate with details provided for 44,546 private supplies in England. The area of England with the most private supplies is the South West (34%) and during 2012 local authorities in this part of the country identified an additional 451 supplies, bringing the total in the South West up to 15,309. There are also significant numbers of private supplies in the North West (6,144) and the East of England (5,285). In 2011, local authorities did not provide sufficient information about 1,780 the private supplies in England to enable them to be classified by the Inspectorate in relation to the reporting requirements of the EU

Drinking Water Directive by the Inspectorate. In 2012, this figure had fallen to 1,166 with a notable improvement in the quality of information provided by local authorities in the North West and South East. However, there continues to be a problem with respect to the private supply records in East of England (589 unclassified supplies), South West England (437 unclassified supplies) and the West Midlands (97 unclassified supplies). Unfortunately, in 2012, there were 11 local authorities that failed to provide any private supply information to the Inspectorate; in nine cases the Inspectorate is satisfied that the problem was one of simple oversight or a misunderstanding about the requirements and received assurances that the matter will be corrected but two local authorities (Epping Forrest District Council and Preston City Council) reported that non compliance with this regulatory duty was intentional.

Out of the total of 44,546 private supplies there are 5,258, which are used for drinking, cooking and washing in the provision of services to the public. Around a half of these are used by the tourism and leisure sector (hotels, bed and breakfast accommodation, holiday lets, hostels, campsites, hostels) with just over a quarter used in premises serving food and a similar proportion associated to public buildings. By the end of 2012, local authorities had risk assessed about two fifths of this type of private supply. Whereas the majority of private supplies in England serve just a single domestic dwelling (25,956) and only require risk assessment or testing at the request of the owner, local authorities must risk assess shared domestic private supplies. At the end of 2012 only 9% of 9,779 shared domestic supplies had a risk assessment in place.

In my report this year I have provided detailed look up tables recording the progress of each local authority generally in meeting their duties under the private supply regulations and specifically in relation to the risk assessment work. These look up tables highlight the outstanding work and will assist local authorities in prioritising the tasks that must be completed by the end of 2014 to protect public health and bring England into compliance with the EU Drinking Water Directive.

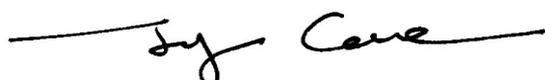
When a local authority identifies a failing private supply, action must be taken to inform consumers so they can safeguard their health in the short term and be informed about the nature and timescale of the improvement works that must be carried out to affect a permanent remedy. In 2012, a total of 429 private supplies were made the subject of improvement notices. It is unlikely that there will be any significant improvement in the safety and quality of private water supplies in England until action to identify and improve all of the failing private supplies has been completed by all local authorities.

### Supervisory activities of the Inspectorate

During 2012, the Inspectorate carried out 1,183 technical audits of water supply arrangements in England and Wales and 1,018 of these audits were in England. In addition the Inspectorate investigated 49 consumer complaints of which 46 were from consumers living in England and handled 322 requests for advice about private supplies from local authorities with and 290 of these coming from local authorities in England. The Inspectorate provided water companies and local authorities with technical guidance on ten topics to facilitate compliance with the drinking water regulations. In addition the Inspectorate also provided joint technical guidance with the Environment Agency relating to implementation of the Water Framework Directive. Finally the Inspectorate managed and published 13 research studies funded by Defra to support the carrying out of regulatory water supply risk assessments.

During 2012, Parliament and the Welsh Government introduced changes to the funding arrangements for the Inspectorate and from 2013 onwards, the cost of regulation of public water supplies will be recovered from water companies. Ministers have approved the charging arrangements and these have been published on the Inspectorate's website. The first charges will apply to regulatory work described in Drinking Water 2013. The work of the Inspectorate in relation to the EU Drinking Water Directive, private water supplies and advising ministers continues to be funded by Defra.

Yours sincerely



Prof. Jeni Colbourne MBE  
Chief Inspector of Drinking Water