

Drinking Water Report 2014



ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities (e.g. landfills, incinerators, waste transfer stations);
- large scale industrial activities (e.g. pharmaceutical, cement manufacturing, power plants);
- intensive agriculture (e.g. pigs, poultry);
- the contained use and controlled release of Genetically Modified Organisms (GMOs);
- sources of ionising radiation (e.g. x-ray and radiotherapy equipment, industrial sources);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by co-ordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFE) Directive.
- Independent reporting to inform decision making by national and local government (e.g. *periodic reporting on the State of Ireland's Environment and Indicator Reports*).

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (e.g. *major development plans*).

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (e.g. *My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Climate, Licensing and Resource Use
- Office of Environmental Enforcement
- Office of Environmental Assessment
- Office of Radiological Protection
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

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Drinking Water Report 2014

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DRINKING WATER REPORT 2014



<http://www.epa.ie/water/dw/quality>

Key Findings for 2014

Public Water Supplies

- **99.90 %** of samples comply with microbiological parameters.
- **99.44 %** of samples comply with chemical parameters.
- **199 Boil Notices and 15 Water Restriction Notices** affected 205,516 people. Of these, 158 short-term, precautionary boil notices related to Storm Darwin.
- *E. coli* was detected at least once in **8 supplies**, down 2 on 2013.
- The **Trihalomethanes** limit was exceeded in **59 supplies**, down 2 on 2013.
- **35%** of results were reported as **accredited**. From 2016 all results should be from laboratories accredited for the parameters tested.

Remedial Action List

- Since 2008, the EPA has listed **456** supplies on its **Remedial Action List**.
- **335** were resolved at the end of 2014.
- **77 %** of the original 339 RAL supplies are no longer on the RAL.
- **121** supplies, serving 937,247 people, were on the RAL at the end of 2014.

Private Water Supplies

- The microbiological quality of private supplies, while improving, remains inferior to public supplies.
- **97.26 %** of samples comply with microbiological parameters.
- **99.54 %** of samples comply with chemical parameters.
- *E. coli* detected at least once in **76 small private supplies and 24 private group water schemes**.

Enforcement Issues

- **236,124** sample results were reported to the EPA.
- **606** notifications of exceedances of the standards were investigated by the EPA.
- **62** audits of public supplies were conducted by the EPA.
- **29** directions were issued by the EPA in 2014 (up from 16 in 2013).
- More than **a third** of supplies audited required disinfection system improvements.

Priority Actions

- Eliminate long-term Boil Water Notices by improving disinfection standards.
- Implement the National Lead Strategy.
- Optimise chemical dosing and improve treatment to reduce THM exceedances.
- Prioritise RAL schemes for improvement / investment.
- Protect sources and abstraction points.
- Develop Drinking Water Safety Plans.

Section 1: Introduction

Section 1.1: Background to the Drinking Water Report

This report provides an overview of the quality of drinking water in Ireland during 2014. The report covers both public and private drinking water supplies. 2014 is the first year that Uisce Éireann : Irish Water was responsible for the management of public drinking water supplies.

This report is based on the EPA's assessment of the 236,124 sample results reported to the EPA by Irish Water and local authorities for public water supplies and private water supplies. For 2014 Irish Water was responsible for public water supplies. The local authorities continue to be the supervisory authorities for private water supplies.

The drinking water regulations (S.I. 122 of 2014) provide the EPA with supervisory powers for public water supplies. The EPA can direct Irish Water to improve the management or quality of a public water supply. Under the regulations Irish Water must notify the EPA of drinking water non-compliances or risk to public health from a public water supply.

The core principle of the EPA's regulation of drinking water supplies is to ensure supplies are "safe" and "secure". Safety of supplies covers testing to ensure that the water quality meets the drinking water standards. Drinking water security means taking a proactive approach and involves examining the treatment in place, management systems, risks to the supply and remedial measures to ensure a constant and reliable supply of safe drinking water.



Irish Water is responsible for ensuring that drinking water is wholesome and clean and meets the requirements of the Drinking Water Regulations. The EPA is the drinking water quality regulator for public water supplies and works to ensure that drinking water supplied by Irish Water meets the standards of the European Union (Drinking Water) Regulations 2014.

Section 1.2: Management of Drinking Water Supplies

A drinking water supply includes the abstraction, treatment, storage and distribution of water from source to consumers. Ireland has a large number of public and private supplies (3,664) for a relatively small population, compared to other EU countries. Ireland has 973 public water supplies in comparison to Scotland's 290 supplies for a similar population size. Managing Ireland's water supplies is complex due to the number and variation in types of supply - geographical location, size, treatment processes, management, consumers, ownership issues, distribution networks and a historical lack of investment. This variation in the characteristics of supplies needs detailed local knowledge, process expertise and a responsive management approach.

Drinking Water Supply Types in Ireland

Supply Type	Supplier/Supplying	No. of Supplies	Population (%)	Supervisory Authority
Public Water Supplies	Irish Water	973	81.9	EPA
Public Group Schemes	Local Group	512	1.9	Local Authorities
Private Group Schemes	Local Group	421	4.2	Local Authorities
Small Private Supplies	Commercial/public activity	1,758	0.9	Local Authorities
Exempted Supplies ¹	Individual supplier	170,000*	11.1	Exempted

*estimated number of private wells or boreholes

81.5% of Ireland's drinking water is sourced from surface water (i.e. river and lakes), which varies in quality. 11.5% is sourced from groundwater and 7% is sourced from springs.

Public Water Supplies vary in size from one or two houses to over 245,000 people on a single supply. Larger supplies tend to have more infrastructure, treatment processes, management controls and resources while smaller rural ones tend to have less. Managing the variation in each supply, the different treatment processes and infrastructural issues is challenging.

Managing distribution networks to maintain good water quality is also challenging and depends on training, expertise, resources and water demand. Reservoirs and networks need cleaning and this work has to be balanced with consumer demand and maintaining pressure. New connections, bursts, leaks, old lead pipes and repairs pose risk of contamination. Long storage times in reservoirs affect disinfection and risks bacterial regrowth. Distribution networks vary in design (grids, loops, branches) and length. Inadequate disinfection can occur in short networks or stagnant water in long ones. Pipework in Public Water Supplies is owned by the water supplier up to the stopcock or meter but from there to the tap is the ownership and responsibility of the property owner or householder.

EPA Advice

The EPA has published a wide range of guidance and technical advice notes available at www.epa.ie/pubs/advice/drinkingwater/ in relation to the management of supplies. Published advice covers source protection, borehole construction, chemical treatment, disinfection, service reservoirs and lead pipes.

The advice published by the EPA covers the technical water treatment aspects of what needs to be improved in relation to source protection, treatment and distribution systems. For drinking water supplies to be deemed secure, the water supplier should profile and manage the risks identified for the supply using the Water Safety Plan (WSP) approach. Water Safety Plans are discussed in more detail in Section 2.3.

Section 1.3: Regulation of Drinking Water Supplies

The EPA can direct Irish Water to improve the management or quality of a public water supply. The local authorities have a similar supervisory role in relation to group water schemes and private supplies.

Handbooks² have been published by the EPA covering the implementation of the regulations for both public and private supplies.

¹ Exempted supply means a supply of water which (a)(i) constitutes an individual supply of less than 10 cubic metres a day on average or serves fewer than 50 persons, and (ii) is not supplied as part of a commercial or public activity, or (b) is used exclusively for purposes in respect of which the relevant supervisory authority is satisfied that the quality of the water has no influence, either directly or indirectly, on the health of the consumers concerned.

EPA responsibilities, as the drinking water quality regulator, for drinking water include the following:

- Enforcing the Drinking Water Regulations for public supplies;
- Investigating notifications of failures to meet the drinking water standards and ensuring necessary action is taken to correct problems;
- Auditing public drinking water treatment plants;
- Issuing Directions where necessary to ensure action is taken to fix problems;
- Investigating drinking water quality complaints not resolved by the water supplier;
- Publishing an annual report on the quality of drinking water in Ireland.

Local Authority responsibilities for drinking water include the following:

- Enforcing the Drinking Water Regulations for private supplies;
- Investigating notifications of failures to meet the drinking water standards and ensuring that private water suppliers are taking the necessary action to correct problems;
- Auditing private drinking water treatment plants;
- Issuing Directions to private water suppliers where necessary to ensure action is taken to fix problems;
- Investigating drinking water quality complaints not resolved by the water supplier.
- From 2014, local authorities also continue to operate, manage and maintain treatment plants and distribution networks for public supplies under service level agreements with Irish Water.

Irish Water is responsible for providing and developing water services. Irish Water took over responsibility for the operation of public water supplies from the Local Authorities from 1st January 2014. Irish Water responsibilities include:

- Management of national water assets and maintenance of the water system;
- Investment, planning and managing capital projects;
- Enforcing the Drinking Water Regulations for public supplies where failures occur in public buildings;
- Customer care and billing.

The **Health Service Executive** also has a statutory role under the drinking water regulations³. Irish Water and local authorities (for private supplies) must consult with the HSE in relation to drinking water exceedances or instances where there is a public health risk. Where Irish Water or the local authority (in consultation with the HSE) considers that the exceedance, risk or treatment failure constitutes a potential danger to human health, Irish Water or the local authority (subject to agreement of the HSE) must inform consumers promptly and provide the necessary advice.

The **Commission for Energy Regulation** (CER) is the independent economic regulator for public water services. Their role is to protect the interests of water customers, ensure water services are delivered in a safe, secure and sustainable manner and that Irish Water operates in an economic and efficient manner. The CER examines and challenges the costs of water and wastewater services and ensures that charges to customers reflect only efficiently incurred costs. These charges contribute to Irish Water's allowed revenue, which the CER approves and monitors. The CER approves the codes of practice in place to protect customers and provides a complaints resolution service to customers with an unresolved dispute with Irish Water.

² Available at <http://www.epa.ie/pubs/advice/drinkingwater/publicwatersupplieshandbook/> and <http://www.epa.ie/pubs/advice/drinkingwater/privatewatersupplieshandbook/>

³ Regulation 9 of *European Union (Drinking Water) Regulations 2014*

Section 2: Public Supplies

This section of the report presents the EPA findings on the quality and management of **973** Public Water Supplies operating in 2014. This number is down from the 978 public supplies covered in the report for 2013 as supplies are merged by Irish Water. Since 1st January 2014 public supplies are the responsibility of Irish Water.

Further Information

All 2014 monitoring results are available at: <http://erc.epa.ie/safer/iso19115/displayISO19115.jsp?isoID=3080>.

Current information on drinking water monitoring results can be accessed via Irish Water's website at <http://www.water.ie/about-us/environment-and-community/water-quality/>.

Historic information on drinking water monitoring results and water supply details for each county (dating back to the year 2000) is available on the EPA's SAFER (Secure Archive for Environmental Research Data) web-page at <http://erc.epa.ie/safer/resourcelisting.jsp?oID=10206&username=EPA%20Drinking%20Water>.

Irish Water's code of practice on complaint handling is available at <http://www.water.ie/our-customer-commitment/>.

Section 2.1: Quality of Public Supplies

175,498 test results for public supplies were submitted to the EPA by Irish Water for assessment. This monitoring was carried out as part of the annual monitoring programme and is designed to provide information on the quality of drinking water. Irish Water is required to ensure that the monitoring programmes meet the monitoring requirements of the drinking water regulations and must be representative of the quality of the water consumed throughout the year, and be equally distributed through the supply. The overall compliance rate for these public supplies, based on samples analysed, was **99.90 %** for Microbiological parameters, **99.44 %** for Chemical parameters and **99.25 %** for Indicator parameters. This compares to 2013 figures of 99.82 % for Microbiological parameters, 99.51 % for Chemical parameters and 98.81% for Indicator parameters. A summary of compliance with the limits (termed 'parametric values' in the Regulations) is set out in Appendix 1 (Public Water Supplies). An explanation of the significance of each of the parameters described in the report is available at <http://www.epa.ie/pubs/advice/drinkingwater/parameterappendix.html>.

Appendix 7 sets out the overall compliance rate for microbiological and chemical parameters by county.

955⁴ supplies were fully compliant for *E. coli*, 8 samples (8 supplies) failed the *E. coli* standard and 4 samples (4 supplies) failed the *Enterococci* standard.

All supplies were 100% compliant for 15 of the 23⁵ chemical parameters. Of the remaining parameters:

- 1 sample failed the chemical parameters Antimony, Copper⁶ and PAH.
- 8 samples (4 supplies) failed the Nitrate standard.
- 39 samples (31 supplies) failed the Lead standard.
- 37 samples (24 supplies) failed the Fluoride standard.
- 4 samples (4 supplies) failed the Pesticide-Total standard.
- 106 samples (59 supplies) failed the Trihalomethanes standard.

⁴ 10 supplies were not sampled for *E. coli*.

⁵ The individual pesticide parameter is calculated separately.

⁶ A failure of the Copper standard is an indication of internal copper plumbing in a building or property rather than a problem with the water supply served to that building/property.

The majority of the failures set out in Appendix 1 relate to “indicator” parameters. Indicator parameters are designed to provide information on the management of the treatment process, the look, taste and smell of the water. A value reported to exceed the limit for an indicator parameter should not, automatically, be considered a cause for concern but a guide for the water supplier to initiate an investigation into the cause of the elevated level of the particular parameter.

36% of these test results were reported as **accredited** results, reduced from 44% in 2013. From 2016 all results submitted to the EPA must be accredited in accordance with the *Drinking Water Handbook on the Implementation of the Regulations for Public water Supplies*⁷.

Compliance with Key Microbiological and Chemical Parameters in Public Water Supplies

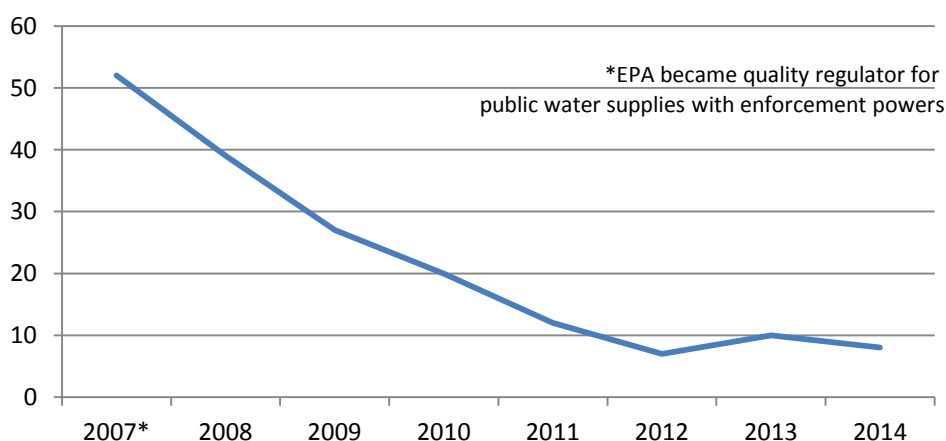
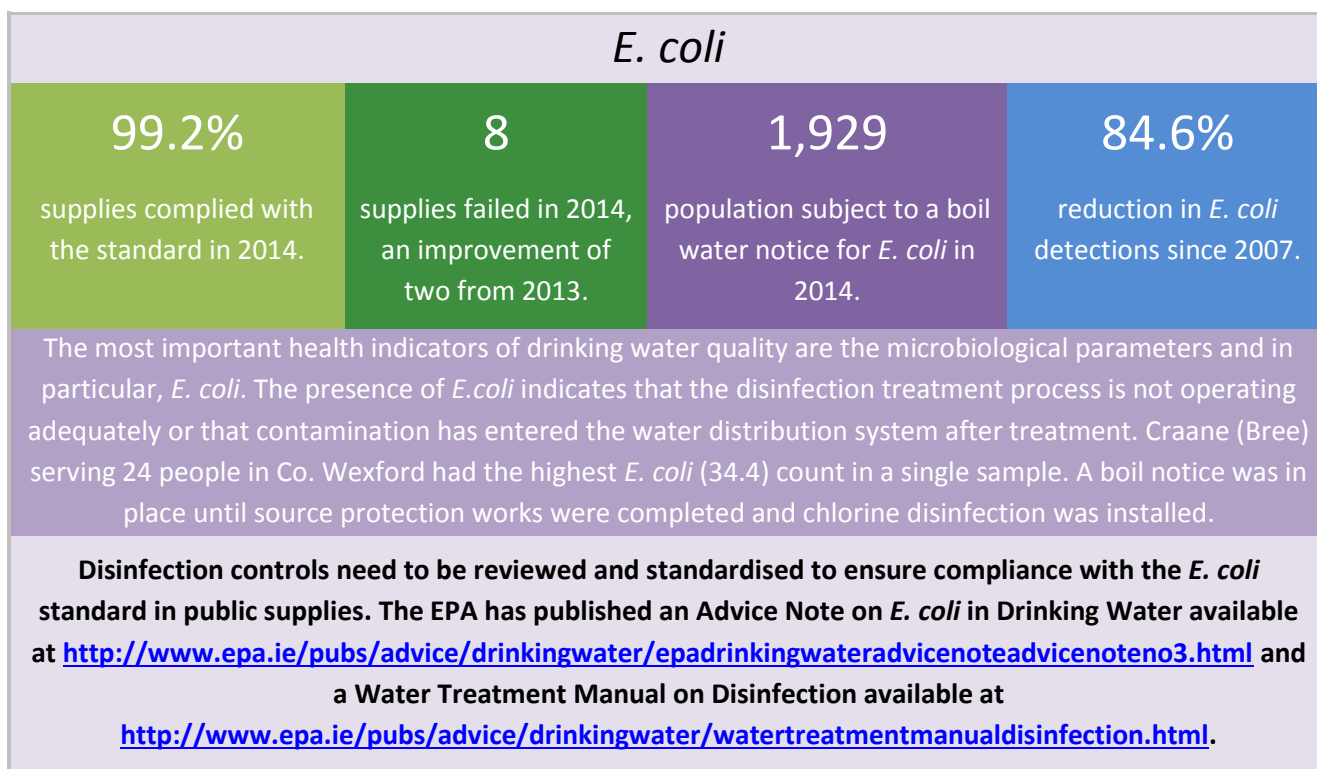


Figure 1: Trend in the number of public supplies where *E. coli* was detected.

⁷ available at <http://www.epa.ie/pubs/advice/drinkingwater/publicwatersupplieshandbook/>

Cryptosporidium (non-mandatory parameter)

<p style="font-size: 24pt; margin: 0;">691</p> <p style="margin: 0;">tests submitted in 2014.</p>	<p style="font-size: 24pt; margin: 0;">7</p> <p style="margin: 0;">supplies, serving 18,352 people, on Boil Water Notice due to a risk from <i>Cryptosporidium</i>.</p>	<p style="font-size: 24pt; margin: 0;">187,804</p> <p style="margin: 0;">population on 36 supplies listed on the RAL for risk from <i>Cryptosporidium</i> at the end of 2014.</p>	<p style="font-size: 24pt; margin: 0;">6</p> <p style="margin: 0;">directions issued for Roscommon supplies at risk from <i>Cryptosporidium</i>.</p>
<p><i>Cryptosporidium</i> is not one of the 48 parameters listed in the drinking water regulations, for which monitoring is specified. However, the EPA has through the EPA Advice Note No. 9: <i>Cryptosporidium</i> Sampling and Monitoring⁸ provided guidance on <i>Cryptosporidium</i> monitoring.</p> <p>Prior to the enactment of the Drinking Water Regulations 2014, the notification of <i>Cryptosporidium</i> detections was only required in cases where the local authority, in consultation with the HSE, considered the supply a potential danger to human health. This requirement has now changed and under the 2014 regulations. Irish Water must notify the EPA of any detection of pathogenic micro-organisms or parasites, including <i>Cryptosporidium</i>, in the supply.</p>			

Trihalomethanes (THM)

<p style="font-size: 24pt; margin: 0;">90.7%</p> <p style="margin: 0;">compliance with the Trihalomethanes standard.</p>	<p style="font-size: 24pt; margin: 0;">59</p> <p style="margin: 0;">supplies exceeded the 100 µg/l standard - the majority are in Donegal, Kerry and Wicklow.</p>	<p style="font-size: 24pt; margin: 0;">20</p> <p style="margin: 0;">of these 59 supplies had Trihalomethanes greater than 150 µg/l.</p>	<p style="font-size: 24pt; margin: 0;">255µg/l</p> <p style="margin: 0;">was the highest result found in NERWSS, Co. Roscommon.</p>
<p>Trihalomethanes are by-products of the chlorination (disinfection) process. These compounds are undesirable in drinking water and their presence should be minimised while not compromising disinfection. The causes of exceedances should be examined, with optimisation of plant treatment and network needed to reduce levels. A joint EPA-HSE fact sheet for consumers on THMs is available at http://www.epa.ie/pubs/advice/drinkingwater/trihalomethanesjointpositionstatement.html.</p> <p>An advice note on Disinfection By-Products for water suppliers is also available at http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenoteadvisenoteno4.html.</p> <p>A national strategy is necessary to ensure natural organic matter is removed through appropriate effective treatment, that disinfection is optimised and water age in reservoirs and distribution networks is managed to achieve compliance with the THM standard.</p>			

Fluoride

Irish Water, on behalf of the HSE, implements the fluoridation of public water supplies. It is a legal requirement under the Health (Fluoridation of Water Supplies) Act and is a matter for the Department of Health and Children to legislate for. The Minister for Health and Children has established an Expert Body on Fluorides and Health charged with responsibility for advising the Minister on this topic. Details are available at www.fluoridesandhealth.ie.

The role of the EPA is to enforce the legal standards in the *European Union (Drinking Water) Regulations 2014* and where the standard is breached to ensure that appropriate corrective action is taken. In the case of fluoride the Drinking Water Regulations set a lower limit of 0.6 mg/l and an upper limit of 0.8 mg/l. The standard in Ireland is more stringent than the EU Drinking Water Directive standard of 1.5 mg/l and the narrow range of compliance is difficult to achieve. In 2014, 37 samples (24 supplies) failed the national standard of 0.8 mg/l for Fluoride. No supply failed the EU standard of 1.5 mg/l in 2014. In 2013, 33 samples (27 supplies) failed the national standard and one sample failed the European standard.

⁸ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenoteadvisenoteno9.html>

Lead

95.7%

of supplies comply with the Lead standard.

10µg/l

the standard for Lead was exceeded in 31 supplies in 2014.

4,671

the population on a water restriction for lead in 2014.

39

samples taken during 2014 exceeded the Lead standard.

Lead pipes still exist in the distribution network both on the private side and the public side. Measures include optimisation of the treatment process to reduce plumbosolvency but the sustainable approach to comprehensively deal with lead exceedances is to remove lead pipes. Actions required to address lead issues are covered in the EPA Advice Note Number 2 published in 2009 on "*Action programmes to restore the quality of drinking water impacted by lead pipes and lead plumbing*"⁹.

A National Lead Strategy was published by the Government in June 2015 and is available at <http://www.environ.ie/en/Environment/Water/WaterSectorReform/News/MainBody,41734,en.htm>
Irish Water published a Lead in Drinking Water Mitigation Plan – Issues Paper in June 2015 and is available at <http://www.water.ie/about-us/project-and-plans/lead-mitigation-plan/Lead-Mitigation-Plan-Issues-Paper.pdf>

Pesticides

0.5µg/l

is the standard for Total Pesticides and was not exceeded in the supplies tested.

0.1µg/l

the standard for individual pesticides was exceeded in 24 supplies

41

the number of samples exceeding the individual pesticide standard.

MCPA

was the pesticide (herbicide) detected in 22 of these supplies.

The individual pesticide limit was exceeded in 41 samples taken from 24 supplies in 2014; 5 supplies were in Limerick and notably, these 5 supplies account for half of the total number of exceeding samples. There is a seasonal pattern in the detection of MCPA exceedance in May/June/July and again in September/October. These are typically the months during which it is applied to grassland for ragwort, rush and thistle control.

Source protection measures must be implemented to protect drinking water sources from pesticide contamination; this requires a catchment based approach including information, education and enforcement. Information leaflets and guidance on the safe use of pesticides is available at <http://www.epa.ie/water/dw/sourceprotection/>. A national strategy is necessary to achieve compliance with the pesticides standards.

The **nitrates** standard of 50 mg/l was exceeded in four supplies - two of these supplies are in Co. Laois and two in Co. Waterford. Both of the Waterford supplies had a water restriction in place for nitrates during 2014. At the end of the year, one of these notices remained in place.

Compliance with Key Indicator Parameters in Public Water Supplies

The **aluminium** standard of 200 µg/l was exceeded in **32** supplies during 2014 compared to 40 in 2013 and 46 in 2012. Aluminium is present in drinking water as a result of its use as aluminium sulphate (a coagulant) in the water treatment process, though can be naturally present in some waters. Historically, there has been some concern about possible links between aluminium in drinking water and Alzheimer's disease. However, the WHO states that: "*On the whole, the positive relationship between aluminium in drinking water and*

⁹ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvicenoteno2.html>

Alzheimer's disease which was demonstrated in several epidemiological studies, cannot be totally discounted. However, strong reservations about inferring a causal relationship are warranted in view of the failure of these studies to account for demonstrated confounding factors and for the total aluminium intake from all sources". In recognition of poor coagulation processes observed during audits of treatment plants the EPA published *Advice Note 15 – Optimisation of Chemical Coagulation Dosing* in 2014¹⁰.

The **turbidity** limit of 1.0 NTU at the treatment plant was exceeded in **16** supplies compared to 30 in 2013. The control of turbidity is one of the indicators of the efficiency of treatment at the plant. Elevated levels of turbidity in the treated water indicate that the treatment process is not operating adequately. It also provides a good indication of whether the treatment plant is capable of removing *Cryptosporidium* oocysts. While the parametric value for turbidity (at the tap) is that the water must be "*acceptable to consumers and [there must be] no abnormal change*" there is a parametric value for turbidity (for water leaving the treatment plant) of 1.0 NTU. In practice turbidity levels need to be much lower and should not exceed 0.2 NTU and preferably be below 0.1 NTU to be protective against *Cryptosporidium* breakthrough in the treatment plant. Technical guidance for operators on the importance of reducing turbidity has been published by the EPA in the *EPA Water Treatment Manual on Disinfection* and in the *EPA Advice Note No 5 - Turbidity in Drinking Water*⁷.

Section 2.2: Water Restrictions and Boil Notices

Where drinking water exceeds the standard or where the water supplier considers there is a risk to public health, the water supplier must consult with the Health Service Executive to determine whether the supply should be prohibited or restricted, and where this is the case consumers must be informed promptly. Where the HSE considers the quality of water intended for human consumption constitutes a potential danger to human health, they recommend to the water supplier that a Water Restriction Notice and/or a Boil Notice is issued by the water provider. Similarly, these notices are removed from supplies, in consultation with the Health Service Executive, when the problem is resolved by the water supplier.

During 2014 there were **199** boil water notices and **15** water restriction notices active in **17** counties affecting **205,516** people. By comparison, in 2013 there were 57 boil water notices and 12 water restriction notices active in 16 counties affecting 35,831 people. Storm Darwin in February 2014 affected 158 supplies serving 171,804 people in the south-west of the country, which were placed on precautionary boil notices for between 1 and 5 days. By the end of 2014, 18 Boil notices and 9 Water Restriction Notices in 14 counties remained in place affecting 27,481 people. Notices can apply to all or part of a supply and last from several days to several years depending on the scale of works necessary to solve the issue. In some cases notices are precautionary in nature due to inadequate treatment or failure of the disinfection system, whereas in other cases notices are put in place because *E. coli* or *Cryptosporidium* is detected. Also, several of the water restrictions relate to the presence of lead pipes. Appendix 5 lists the notices in place during 2014.

As of 30 September 2015, there were 16 supplies on Boil Water Notices affecting a population of 6,093 and 12 supplies on Water Restrictions affecting a population of 3,237 in 14 counties.

Storm Darwin

On the 12th of February 2014 a storm depression crossed Ireland bringing with it extreme weather conditions to most areas. Many of the country's meteorological stations measured the highest rainfall on record during so-called Storm Darwin with areas in the West, South, Midlands and East recording double or triple their long term average rainfall levels. Winds peaked during the afternoon with hurricane force 12 winds recorded in the West. On the ground, there was widespread, serious flooding and destruction of trees, property and infrastructure such as roads and electricity networks. As the seriousness of the storm event unfolded, Irish Water, in consultation with the HSE, invoked its Severe

¹⁰ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenoteno5.html>

Weather Response issuing Precautionary Boil Water Notices on county wide basis in some cases. Notices were attributed to various issues encountered such as loss of power, loss of communications with monitoring instruments, inability to access treatment plants, and due to difficulties and safety concerns accessing remote or exposed areas. None of the notices issued at this time were due to a confirmed water quality issue. Notices were communicated promptly to consumers for the protection of health, as well as the safety of Irish Water employees and contractors. In the wake of the storm and as severe weather abated, Irish Water agreed a protocol with the HSE for the lifting of notices with the majority of notices being rescinded within a matter of days.

Section 2.3: Security of Public Supplies

Many of the current problems seen in the water supply network result from under-investment and a reactive management approach to water quality problems. In contrast, the Water Safety Plan (WSP) is a preventive, management framework for safe drinking water that comprises system assessment and design, operational monitoring and management plans (including documentation and communication). A WSP for each public water supply facilitates continuous improvement in the security of the supply and protection of human health. The aim of a WSP is to ensure the safety and security of a water supply by identifying and managing risks. The concept of safe and secure is explained in Section 1.1. The EPA's *Advice Note No.8 – Developing Drinking Water Safety Plans*, provides guidance on the WSP approach.¹¹

At the end of 2014 there were 53 Water Safety Plans in preparation and 6 completed compared to 66 in preparation and 2 completed at the end of 2013, as reported by Irish Water.

The EPA recommends that a WSP is developed specifically for each drinking water supply and should be considered as a risk management strategy to ensure the continuous supply of safe water. The EPA's safe and secure model (Figure 2) for the provision of water is consistent with the World Health Organisation's WSP approach that encompasses all potential hazardous events from the catchment to the consumer.

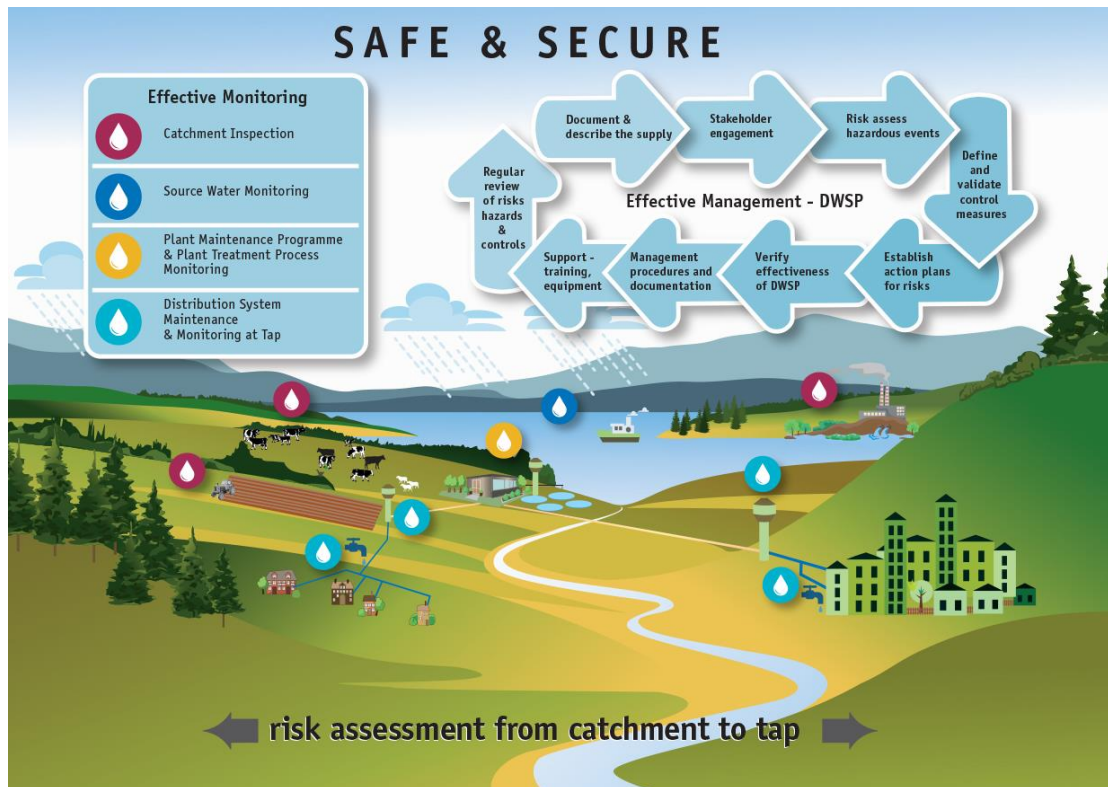


Figure 2: The Drinking Water Safety Plan Approach

¹¹ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenote-advisenotenote8.html>.

The EPA continues to encourage and support the development of WSPs as the most effective approach to securing and safeguarding Ireland's water services. In 2014, the EPA provided training on its WSP web tool to local authorities' water service staff and Irish Water. The EPA continues to progress WSP implementation through support, guidance and sharing information on the preparation and implementation of WSPs.

Irish Water submitted a "Draft Drinking Water Safety Plan: Implementation Plan 2014-2016" to the EPA in November 2014 and this will be used to drive improvements in the provision of drinking water and ensure funding is provided to the supplies that need it most. Irish Water plans to complete DWSPs for 135 water supply zones serving a population of 2,130,308 (57%) by the end of 2016. Figure 3 illustrates progress with the implementation of DWSPs (completed, in preparation or to commence). This is an improvement from 2013 where 2 WSPs were completed.

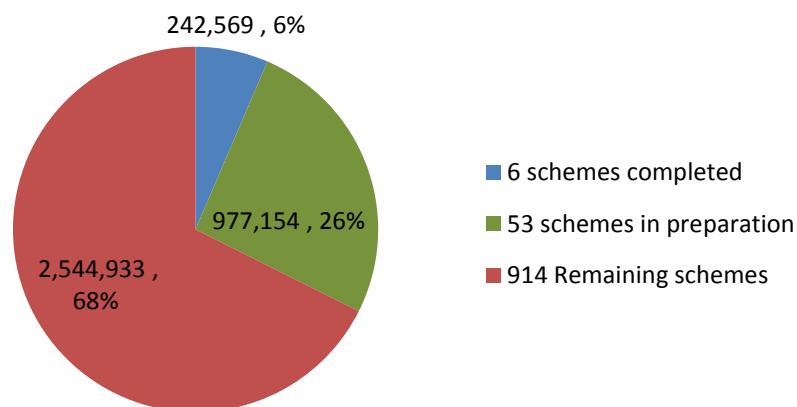


Figure 3: DWSP Implementation Progress in September 2015 (population coverage, %)

Financial and resource requirements of water safety plans need to be addressed at the outset. Proper implementation of the WSP approach can save money and better target resources in the longer term. The output of WSP risk assessments should inform the Capital Investment Programme 2017-2021, which will assist the targeting of investment towards priority (high risk) supplies.

Irish Water is now in a position to adopt the WSP approach for public water supplies, in collaboration with stakeholders (e.g. agriculture and industry sectors, landowners, local government and customers working on catchment protection measures) and work with them on risk reduction. A network of stakeholders should actively facilitate effective communication, identify, agree and put in place controls and mitigation measures and monitor their effectiveness. Implementation of the WSP approach and providing relevant information on the WSP risk assessment will increase consumer and stakeholder confidence in the safety and security of water supplies.

Section 2.5: Enforcement of Public Supplies

The drinking water regulations (S.I. 122 of 2014) provide the EPA with supervisory powers for public water supplies. The EPA can direct Irish Water to improve the management or quality of a public water supply. Under the regulations Irish Water must notify the EPA of drinking water non-compliances or risk to public health from a public water supply. The EPA has published a handbook on the implementation of the regulations to provide guidance to Irish Water. The EPA also publishes water treatment manuals and advice notes to provide practical guidance to water suppliers. All of these documents are available at <http://www.epa.ie/pubs/advice/drinkingwater/>.

Section 2.5.1 Exceedances of legal parametric limits in Public Water Supplies

The Drinking Water Regulations require water suppliers to ensure that any failure to meet the limits set in the Regulations is immediately investigated to determine the cause of the failure. The water supplier must notify the EPA of any such failure and relay the results of its investigations in accordance with the *Drinking Water Handbook on the Implementation of the Regulations for Public water Supplies*¹².

During 2014, the EPA received and assessed **606** notifications from Irish Water in relation to public water supplies, up from 429 in 2013. In addition, 158 notifications of precautionary boil notices were received following Storm Darwin where there was no detected failure to meet a parametric limit. A breakdown of the number of public water supplies in which a microbiological or chemical parameter exceeded the standards in 2013 and 2014 and was subsequently notified to the EPA is provided in Table 1.

Table 1: Number of Public Water Supplies where the microbiological or chemical exceedances were notified to the EPA during 2013 and 2014.

Parameter	No. of supplies with Notifications in 2013	No. of supplies with Notifications in 2014	Change since 2013
Microbiological			
<i>E. coli</i>	14	13	↓ 1
<i>Enterococci</i>	7	6	↓ 1
Chemical			
Antimony	2	1	↓ 1
Arsenic	1	0	↓ 1
Benzene	0	1	↑ 1
Benzo(a)pyrene	0	0	No change
Bromate	1	1	No change
Cadmium	0	0	No change
Copper	6	7	↑ 1
Fluoride	3	2	↓ 1
Lead ¹³	12	47 ¹⁴	↑ 35
Nickel	0	2	↑ 2
Nitrate	8	6	↓ 2
Nitrite (at tap)	1	0	↓ 1
PAH	0	3	↑ 3
Pesticides (individual)	17	28	↑ 11
Pesticides (Total)	0	3	↑ 3
Trihalomethanes (Total)	70	68	↓ 2

 Improvement on 2013
  Deterioration on 2013

¹² available at <http://www.epa.ie/pubs/advice/drinkingwater/publicwatersupplieshandbook/>

¹³ Individual lead notifications may relate to more than one supply zone.

¹⁴ The statutory limit decreased from 25 µg/l to 10 µg/l on 25/12/2013 resulting in many more samples being deemed non-compliant in 2014.

A trend of improved public water supply compliance across 8 parameters can be seen during 2014. There was no change in public water supplies' performance in relation to 4 parameters and there was deterioration in relation to 7 parameters. 5 parameters were not exceeded at all, in any supply. Overall, the year-on-year trend from 2013 to 2014 was similar to the 2012 - 2013 year-on-year assessment period.

The number of supplies where the detection of *E. coli* was notified to the EPA reduced by 1 to 13 supplies during 2014 compared to the previous year. Findings made during EPA audits in relation to disinfection systems, however, highlight that meeting the minimum disinfection criteria remains an issue.

Chlorination is vital to make our water supplies safe from infectious microorganisms. The chlorination process may also produce trihalomethanes (THM), undesirable by-products, under certain conditions. There has been a small decrease in the number of public water supplies where THM failures were notified to the EPA, however the number of supplies remaining is high at 68 and a significant improvement in the avoidance of THM by-product production is required. Continued implementation of recommendations in the *EPA Advice Note No. 4 on Disinfection by-Products in Drinking Water*¹⁵ is recommended to further manage THM formation in supplies towards achieving compliance. A position paper developed by the Health Service Executive and the Environmental Protection Agency on Trihalomethanes in 2011 provides a summary of the issues in relation to trihalomethanes in drinking water including health, legislation and interventions¹⁶.

There was 1 bromate exceedance of the 10 µg/l limit in 2014 (Cahersiveen, Co. Kerry). Bromate is also a disinfection by-product associated with the reaction of chlorine with bromide in the water. Irish Water has switched to a low-bromate disinfectant and further bromate sampling is underway. There were no further exceedances.

Nitrate levels above the parametric value of 50 mg/l were notified to the EPA for 6 supplies in 2014, a decrease of 2 from the previous year. 4 of these supplies were groundwater supplies located in Co. Waterford and 2 are groundwater supplies in Co. Laois. Two of the supplies in Co. Waterford were subject to a restriction on use during 2014 following HSE advice. One restriction notice was rescinded during 2014 and one notice remains in place with the issue yet to be resolved. The solutions provided by Irish Water for supplies with elevated nitrates include either sourcing water from alternative supplies or the installation of nitrate removal systems. Nitrate in springs and groundwater is attributed largely to the impact of diffuse pollution from agricultural sources. A position paper developed by the Health Service Executive and the Environmental Protection Agency on nitrate in 2010 provides a summary of the issues in relation to nitrate in drinking water including health, legislation and interventions¹⁷.

The number of supplies affected by lead levels exceeding the standard was up significantly during 2014 to 47, compared to 12 during 2013 due to the limit decrease from 25 µg/l to 10 µg/l on 25/12/2013. In addition, increased monitoring for lead in many areas contributed to the rise in exceedances. A national lead strategy was published in June 2015¹⁸. A position paper developed by the Health Service Executive and the Environmental Protection Agency on lead in 2013 provides a summary of the issues in relation to lead in drinking water including health, legislation and interventions¹⁹.

¹⁵ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenoteadvisenoteno4.html>

¹⁶ Available at <http://www.epa.ie/pubs/advice/drinkingwater/trihalomethanesjointpositionstatement.html>

¹⁷ Available at <http://www.epa.ie/pubs/advice/drinkingwater/nitratepositionpaper.html>

¹⁸ Available at <http://www.environ.ie/en/Environment/Water/WaterSectorReform/News/MainBody,41734,en.htm>

¹⁹ Available at <http://www.epa.ie/pubs/advice/drinkingwater/leadpositionpaper.html>

Spotlight on Lead

The standard for lead in drinking water was reduced to 10µg/l from 25µg/l at the end of 2013 to reflect the public health impact that lead can have, particularly on vulnerable users such as pregnant women, infants and young children. The presence of lead in drinking water is as a result of water supply pipes and connections either made of lead or containing lead materials and these can be both in the public supply network and within the private premises. Lead on the public side up to the property boundary is the responsibility of Irish Water. Irish Water is also responsible for pipes at the rear of some terraced houses where a looped shared service pipe is in place. Lead inside the property boundary and after the stopvalve, is the responsibility of the property owner. Lead pipework is most likely to be present in premises constructed before 1970.

In June 2015 the Government published a National Lead Strategy to reduce exposure to Lead in drinking water. The strategy sets out the responsibilities in relation to reducing exposure to lead including:

- Irish Water's responsibility in relation to the quality of water in public supplies.
- The owners of group schemes and private supplies are responsible for the quality of those supplies.
- Property owner's (public and private) responsibility in relation to the removal of lead pipework in those properties.
- The EPA's responsibility to regulate Irish Water as the drinking water quality regulator.
- The local authorities' responsibility to regulate group schemes and private supplies.
- The stakeholder's responsibility to consult with the HSE on the actions to be taken to protect human health in the event that drinking water poses a risk to public health.

Subsequent to the publication of the National Lead Strategy, Irish Water published a 'Lead in Drinking Water Mitigation Plan - Issues Paper' as the first phase in the development of a national plan to address the issue of human exposure to lead in drinking water. The Issues Paper was developed in consultation with the EPA and the HSE. The paper communicates to the public the issues around the presence of lead in drinking water and enables public consultation on Irish Water's approach to addressing these issues. The Issues Paper outlines:

- Irish Water's plans to identify all properties that have or are likely to have lead pipework;
- plans to risk assess these properties with the aim of prioritising higher risk areas; and
- the mitigation options being considered including lead pipe replacement and orthophosphate dosing.



Where lead exceedances have been detected at a premises, Irish Water has committed to replacing public side lead following customer replacement of private side lead, if private side lead is present. Where no private side lead is present Irish Water will prioritise the replacement of this public side within its programme for removal. Irish Water has stated that it will take 10 years to replace all public lead pipes and connections and that ortho-phosphate dosing has been proposed as an interim measure to reduce lead exposure. A pilot project to commence ortho-phosphate dosing was instigated in 2015 on the Limerick City Public Water Supply. The effectiveness of ortho-phosphate dosing in reducing lead levels will be monitored. Any change in ortho-phosphate levels in the relevant waste water treatment plant discharges will be also be monitored.

Lead mains replacement works underway in Mallow, Co. Cork.

In 2014, 7 supplies were affected by copper levels exceeding the 2.0 mg/l limit, an increase of 1 from the previous year. In all 7 supplies, the investigation undertaken by Irish Water discovered that the exceedances were due to copper in the consumer's own plumbing system. Irish Water in each case informed the property owner of the findings of the investigation and either advised or directed, in the case of public use buildings, that they remove the privately owned copper piping causing the problem.

A trend of increase in the number of public water supplies affected by **pesticides** exceedances continued during 2014. Pesticide levels above the parametric value were detected in **28** schemes compared to 17 in 2013. As was observed during 2012 and 2013, the herbicide MCPA prevailed in the notifications received. The Pesticides Working Group devised an awareness-raising campaign which was launched in the summer of 2014. The EPA with other stakeholders collaborated in a joint initiative with farmers to facilitate the removal of farm hazardous waste including pesticides. Over a two year period approximately 32 tonnes of pesticides was removed for disposal. The EPA intends to devise a household initiative to facilitate the removal of hazardous waste from households and plans to continue the successful farm hazardous waste scheme into 2016.

The number of supplies with **Antimony** exceedances decreased from 2 in 2013 to 1 in 2014 - the Pettigo supply, Donegal had levels above the parametric value of 5 µg/l caused by natural geological conditions.

Section 2.5.2 Remedial Action List

The Remedial Action List, first prepared by the EPA in 2008, is a dynamic list of public water supplies in need of remedial action. Public water supplies were listed by the EPA on the original RAL for one or more reasons:

- Failure(s) of the following priority RAL parameters in the previous two years:
 - Table A (microbiological parameters): *E. coli*
 - Table B (chemical parameters): nitrate, trihalomethanes, bromate
 - Table C (indicator parameters): aluminium, turbidity
- Inadequate treatment (e.g. no treatment other than chlorination for a surface water supply or poor turbidity removal or excessive levels of aluminium in the treated water).
- Monitoring results or compliance checks by the EPA indicated a lack of operational control at the supply's treatment plant.
- Identified by the Health Service Executive as a supply where improvements were required.

The RAL includes supplies where the primary issue to be addressed is the water treatment plant. The list does not include supplies where there are issues of quality caused by the distribution network. For example, supplies that have failed to meet the lead parametric value due to the presence of lead pipework in the distribution network are not included on the list. Actions required to address lead issues are covered in the EPA Drinking Water Advice Note No. 2 published in 2009 on "*Action programmes to restore the quality of drinking water impacted by lead pipes and lead plumbing*"²⁰.

At regular intervals, additional supplies are added to the RAL based on further information from EPA audits, notifications of exceedances or information gathered from Irish Water, the Health Service Executive and the Department of Environment, Community and Local Government. Supplies are removed from the list at each update when sufficient corrective action is taken by Irish Water and the effectiveness of the measures is demonstrated to the satisfaction of the EPA. In general, a supply will not be removed from the list on the basis of monitoring results alone. Irish Water must demonstrate that appropriate actions have been taken (e.g. new infrastructure, procedures or training) to ensure that compliance is secured and the risks of failure have been minimised. In addition, Irish Water must ensure ongoing quality and management of all supplies to prevent them being placed on the RAL in the future.

Remedial Action Progress

The first RAL collated by the EPA in 2008 identified **339** public water supplies representing **36%** of public drinking water supplies that required detailed profiling to ensure that the supply is providing clean and wholesome drinking water. At the end of 2014 there were **121** schemes on the RAL, serving **937,247 persons**. Appendix 6 contains progress of RAL supplies at the end of 2014 which is summarised as follows:

²⁰ Available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvisenoteno2.html>

- 260 (77%) of the original 339 supplies were removed from the RAL by the end of 2014 (Figure 4).
- 75 supplies were added to the original RAL but have been subsequently removed.
- 42 supplies were added to the original RAL and remain on the current RAL.
- 121 supplies were on the RAL at the end of 2014, supplying water to 937,247 consumers (Figure 4).
- Dates for completion of works were available for 97 of schemes on the list. However, 24 schemes (up from 7 at the end of 2013) did not have completion dates (though 8 were new schemes added in late 2014).
- Irish Water undertook a review of works previously proposed by local authorities to remove supplies from the RAL and, in most cases, revised the completion dates. Completion dates for work on only 42 (35%) of schemes on the list did not slip compared to estimates provided by local authorities at the end of 2013, though dates were brought forward for 5 high risk schemes in Roscommon. Slippage on estimated completion dates has been attributed, by Irish Water, to a number of factors such as delays obtaining required planning permission or delays in the procurement process. In some cases remedial actions have been completed and at verification stage have been found to be inadequate to ensure compliance.

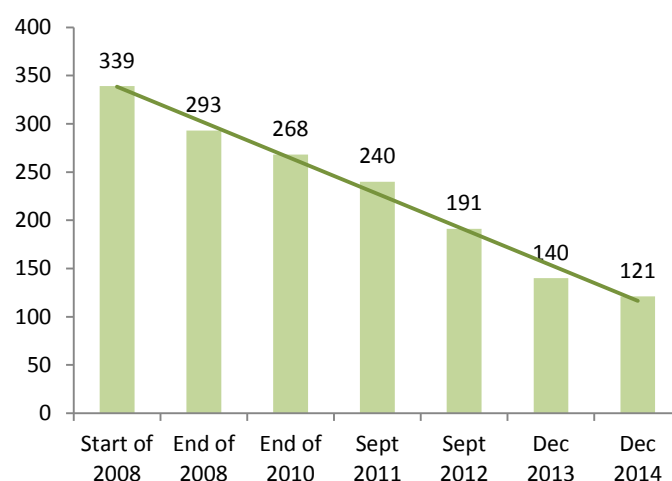


Figure 4: Reduction in the number of public water supplies on the Remedial Action List.

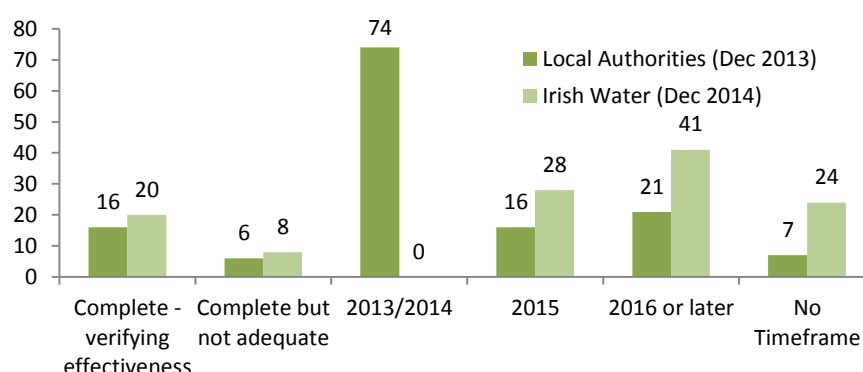
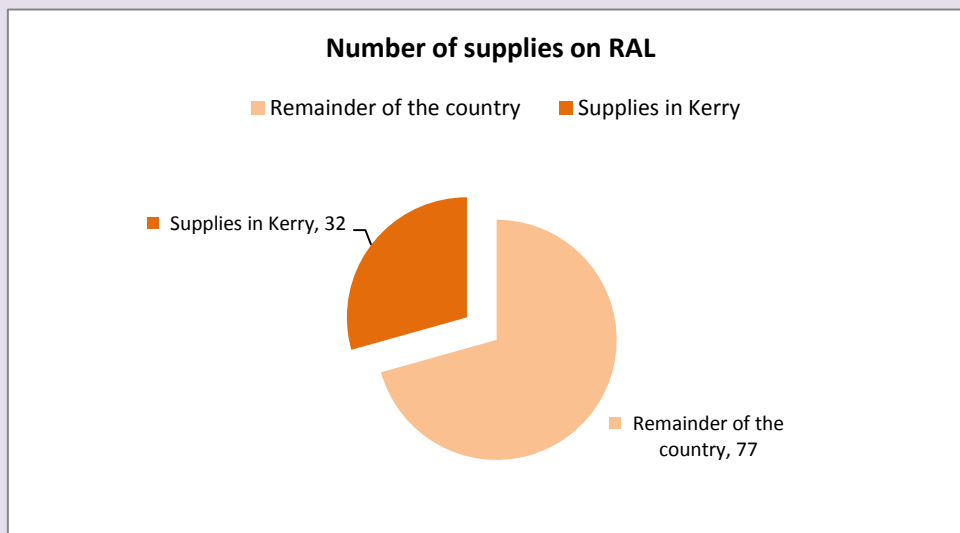


Figure 5: RAL completion dates provided by Irish Water in December 2014.

Appendix 6 gives a breakdown of the supplies on the RAL in each county along with anticipated completion dates as provided by Irish Water as of December 2014.

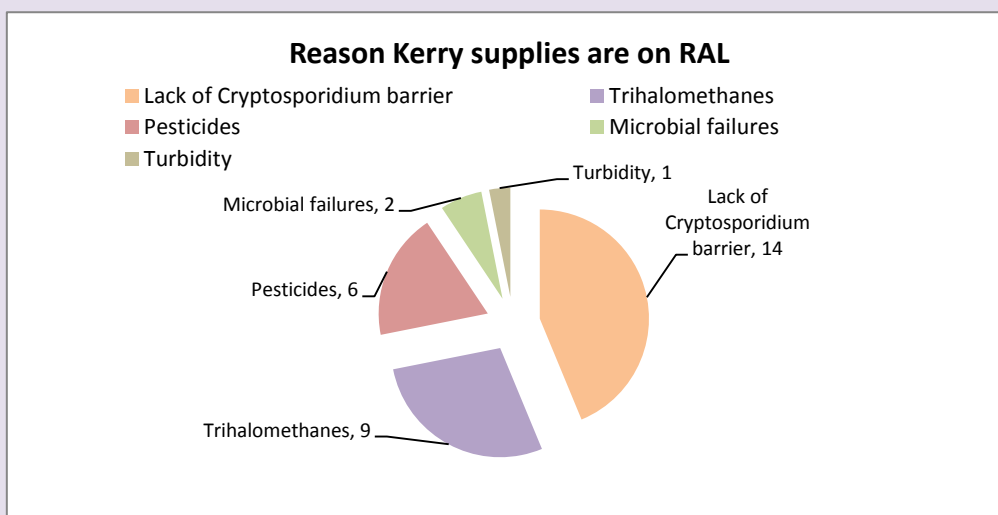
Spotlight on Kerry

The EPA Remedial Action list highlights the supplies in need of improvement and that pose a risk to consumers (see section 2.5.2). The most recent list (Q2 2015) comprises 109 supplies of which 32 are in County Kerry. These 32 supplies in Kerry serve 130,159 people and many have been on the RAL since 2009. This highlights the significant requirement for improvements to supplies in County Kerry.



The reasons each of the 32 supplies were put on the Remedial Action List are:

- 14 supplies serving 94,366 people with inadequate treatment for **Cryptosporidium** (Ballinskelligs, Caherdaniel, Castlecove, Central Regional: Scart, Central Regional : Sheheree, Central Regional : Ballintobeenig, Central Regional: Knocknageeha Gneeveguilla, Glen, Kenmare, Lisloose Reservoir, Lough Guitane, Maulin, Minard No.1 (Puck Island), Mountain Stage).
- 9 supplies serving 23,314 people with elevated levels of **trihalomethanes** (Ballymacadam, Barraduff, Cahirciveen, Kilgarvan, Kilsarkin, Lisarboola, Shrone, Ventry, Waterville).
- 6 supplies (from a single source) serving 10,440 people with elevated levels of **pesticides** (Dromin: Scartleigh, Dromin: Ballybunnion, Dromin: Ballyduff, Dromin: Ballylongford, Dromin: Listowel/Moyvane, Dromin: Tarmons).
- 2 supplies serving 1,832 people with **microbiological** failures (Caragh Lake, Lauragh).
- 1 supply serving 207 people with **poor turbidity removal** (Templenoe).



Irish Water has indicated that completion dates for 17 water supplies are further delayed, with one completion date extended by 18 months. Irish Water's reasons for these delays include timeframes that had been estimated, site acquisition issues, network upgrades and connections to other supplies. Irish Water must prioritise supplies on the RAL and prevent any further slippage of completion dates for remedial actions.

Supplies on the RAL at the end of 2014.

47	45	9	20
for a microbiological failure e.g. <i>E. coli</i> , <i>Cryptosporidium</i>	for a Chemical Failure e.g. nitrate, pesticides, trihalomethanes	for an Indicator failure e.g. aluminium, coliforms	for another reason e.g. vulnerable source, EPA audit
These supplies were either on the original RAL or were subsequently added to the RAL.			
121 supplies were on the RAL at the end of 2014.			

The complete list of public water supplies currently on the RAL, including details of the proposed remedial measures and associated timeframes, is available at <http://www.epa.ie/pubs/reports/water/drinking/>.

A key factor to ensure that supplies on the RAL are progressed is that investment in infrastructural improvements at these supplies is prioritised. Investment must prioritise boil water notices/restrictions and all supplies on the RAL list.

Section 2.5.3 Audits

During 2014 the EPA conducted **62 audits**²¹ (Appendix 7) of public drinking water supplies across 19 local authority areas; 43 were scheduled audits and 19 were reactive audits. Audits, particularly reactive audits, are undertaken at problem supplies following notification of an exceedance or the identification of another supply issue. 15 audits were undertaken of supplies where a boil water or water restriction notice was active during the year. A summary of the main compliance issues identified across the 62 audits completed is provided below:

Audit Findings: Source Protection

Of the 62 audits undertaken during 2014, **26** of the supplies used surface water as their raw water source. **19** were groundwater-fed and **12** supplies sourced their water from springs only. **5** supplies used water from a mixture of these source types. During an EPA audit, the adequacy of source protection measures in the catchment and in the immediate area of the abstraction point is appraised. The main findings in relation to source protection at the 62 supplies audited were:

EPA Audit Findings - Source (Total = 62)

40	19	8	5
supplies had inadequate source protection. 22 had adequate source protection.	supplies were using uncovered springs or poorly protected wells.	supplies using spring or groundwater sources had microbiological contamination in the raw water.	supplies using spring or groundwater sources showed evidence of surface water ingress.
Poor source protection measures in catchments or zones of contribution and poorly protected well heads or springs can lead to the contamination of the source water. Disinfection can address some contaminants but not all. Supplies with inadequate source protection that do not have a treatment barrier are at risk of entry of <i>Cryptosporidium</i> into the supply.			
Adequate source protection is critical to ensuring supply safety and security.			

²¹ Available at <http://www.epa.ie/pubs/advice/drinkingwater/audits/>

Where source protection was recorded as inadequate the EPA audit report, issued subsequently to Irish Water, sought that either source protection be enhanced or that the suitability of the current treatment be critically assessed to determine if it was adequate to ensure safe drinking water.

Audit Findings: Treatment Process

The majority of an EPA audit is dedicated to a detailed, critical appraisal of the treatment process. The first metric of a treatment plant to be examined is the treatment capacity. Of 62 audits completed during 2014, **1** supply (Ennistymon, Co. Clare) was found to be operating above 110% of its design capacity. A further **5** supplies were found to be by-passing some part of the treatment process. At Trennagleeragh, Co. Mayo there was no treatment in place. In Lough Mask, Co. Mayo there was partial by-passing of the coagulation stage. In Tellarought, Co. Wexford and Drumcong, Co. Leitrim there was no disinfection and in Aughrim Annacurra, Co. Wicklow ozonation was not in use.

The two key processes in water treatment are chemical treatment and disinfection. Audit findings in relation to both are summarised below.

Audit Findings: Chemical Treatment

All public water supplies using surface water sources or using groundwater sources which are influenced by surface water are required to have in place a treatment barrier. Chemical treatment functions as a barrier to remove contaminants and particulate matter from water, treating it to the required standard and to prevent entry of *Cryptosporidium* into the water supply. **30** of the supplies audited by the EPA during 2014 involved chemical treatment.

EPA Audit Findings – Chemical Treatment (Total = 30)			
11 supplies had problems with the operation of filters.	3 supplies had turbidity > 1.0 NTU after filtration. A further 3 did not have a turbidity monitor on each filter.	7 supplies had inadequate chemical dosing. 6 supplies were using unapproved or out-of-date chemicals.	5 supplies had floc carryover from the clarifiers.
Floc carryover indicates poor control over chemical dosing. Poor operation of filters and poor turbidity removal means that if <i>Cryptosporidium</i> is present in the source water it is likely to be in the treated water and may pose a risk to human health. In response to continued findings on audits in relation to chemical treatment, in 2014 the EPA published an Advice Note on Optimisation of Chemical Coagulant Dosing at Water Treatment Works ²² .			
Chemical treatment requires careful management to remove contaminants and prevent entry of <i>Cryptosporidium</i> into the supply.			

Audit Findings: Disinfection

As a minimum, all drinking water supplies should be disinfected to provide a barrier to microbiological contamination in order to ensure the safety of the final water for drinking. The disinfection system should be reliable and verifiable. **27** supplies audited during 2014 did not meet the minimum disinfection criteria set out by the EPA. **1** of these had no treatment whatsoever (Trennagleeragh, Co. Mayo). 2 of these had no disinfection (Tellarought, Co. Wexford and Drumcong, Co. Leitrim). Irish Water has developed a standardised approach to calculate effective chlorine contact time for disinfection.

²² Available at <http://www.epa.ie/pubs/advice/drinkingwater/dwadvicenote15.html>

EPA Audit Findings – Disinfection (Total = 62)

11

supplies did not have a chlorine/UV monitor and alarm.

6

supplies had inadequate disinfection contact time. A further 13 had not calculated the contact time.

7

supplies did not have duty and standby disinfection dosing.

16

supplies had disinfection monitors and alarms that were not working or not being responded to.

The EPA sets out minimum disinfection dosing requirements. **27 supplies** audited during 2014 did not meet these disinfection criteria. This figure includes supplies that did not have disinfection contact time calculated. Inadequate disinfection contact time can result in insufficient disinfection and the entry of microorganisms into the supply. Duty and standby dosing equipment is necessary to provide disinfection security in the event of pump failure. The absence of a working chlorine monitor means that the adequacy of disinfection cannot be verified. A working alarm is required in order to alert the operator to any issues that might arise.

Reliable and verifiable disinfection is critical to ensuring supply safety and security.

Audit Findings: Distribution

Treated water can encounter a number of hazards after it enters the distribution system or storage reservoirs which have the potential to compromise drinking water security, and consequently, its safety. **46** of the supplies audited during 2014 had treated water storage tanks or reservoirs as part of their infrastructure. **12** supplies' treated water storage tanks or reservoirs did not have adequately sealed vents to prevent ingress or animal access to treated water which can result in contamination.

Update on Roscommon

In the 2013 Drinking Water Report Co. Roscommon was highlighted due to the risk of *Cryptosporidium* in many of the supplies in that county. There were eight boil notices affecting 21,151 people on the Boyle, Boyle/Ardcarne, Castlerea Urban, Castlerea Regional, Northeast Strokestown/Elphin, Northeast Tarmonbarry, Northeast Roosky and South Roscommon Kileglan public water supplies. Eleven of the Roscommon supplies were on the EPA Remedial Action list and the EPA issued directions to either Roscommon County Council or Irish Water for each of the 10 supplies at risk from *Cryptosporidium* requiring either the installation of a barrier or an action programme to prevent the entry of *Cryptosporidium*.

Significant works have been completed by Roscommon County Council and Irish Water in 2014 and 2015 to address this risk.

- **Boyle and Boyle/Ardcarne:** A new treatment plant with coagulation, filtration and UV disinfection was completed in April 2015. Following an EPA audit the boil notice, affecting over 6,000 people, was lifted on 1st May 2015.
- **South Roscommon Kileglan:** A new treatment plant with coagulation, filtration and UV disinfection was completed, audited by the EPA and the boil notice, affecting 6,000 people was lifted on 30th June 2015.
- **Castlerea Urban and Castlerea Regional:** A temporary treatment plant with coagulation, filtration and UV disinfection was installed, audited by the EPA and the boil notice, affecting over 5,200 people was lifted on 30th June 2015.
- **South Roscommon Lisbrock:** A new treatment plant with coagulation, filtration and UV disinfection serving 10,000 people was completed, audited by the EPA and removed from the Remedial Action list.
- **Ballyfarnon:** an EPA direction issued in October 2014 to prepare a *Cryptosporidium* action programme by 30th October 2015. Construction of a new treatment plant for the Arigna Regional Water Supply Scheme was completed in July 2015. Following an EPA audit the supply was removed from the Remedial Action list.



Newly completed treatment plant at Boyle, Roscommon (courtesy of Glan Agua Ltd).

These works by Roscommon County Council and Irish Water on 7 supplies resulted in over 17,000 people receiving appropriately treated water and no longer being on a boil notice. These supplies were also removed from the EPA Remedial Action list.

Further works are required to upgrade supplies that remain at risk from *Cryptosporidium*.

- **North East Regional (Stokestown/Elphin, Tarmonbarry and Roosky):** an EPA direction was issued in June 2014 to install a *Cryptosporidium* barrier by 30th June 2015. A temporary solution is planned to be in place by December 2015. This is the only supply in Roscommon that remains on a boil notice affecting 3,908 people.
- **Ballinlough/Loughglynn:** Irish Water plans to serve this supply from the Lough Mask supply by 2019. An EPA direction, issued in August 2014 to prepare a *Cryptosporidium* action programme, is due by 24th October 2015.

Section 2.5.4 Directions and Prosecutions

Following an exceedance of a parametric value or a finding made during an audit, the EPA may issue a Direction under the Drinking Water Regulations **if it is not satisfied that the actions taken by the water supplier are adequate** or if proposed actions are required to be completed within a particular timeframe.

The EPA issued **29** legally binding Directions to Irish Water during 2014.

EPA Directions Issued			
1	6	15	7
issued for Quality of Treatment and Distribution equipment and materials (Regulation 13)	issued for Protection of Human Health (Regulation 9)	issued for other purposes deemed appropriate by EPA (Regulation 16)	issued for Remedial Action Programmes (Regulation 10)
Directions are used by the EPA where necessary to ensure that works are carried out to provide safe and secure drinking water.			
Compliance with EPA directions is legally binding and the EPA can enforce the directions through the courts.			

The reasons for issue of 29 Directions during 2014 and the status of the Directions at the end of 2014 are tabulated below²³. The total number of Directions issued during 2014 showed increase from 16 issued in 2013. Notably, Directions were issued due to trihalomethane exceedances in 9 supplies during 2014 compared to only 1 supply during 2013. In addition, 2014 saw the EPA issue 3 Directions due to inadequate responses by Irish Water to EPA Audit Reports. None were issued in 2013 for this reason.

²³ During 2014 legal proceedings were initiated in relation to three of these directions.

Table 2: EPA directions issued during 2014 – reason for issue and status at end of 2014.

Area/ County	Supply	Reason for Direction	Issue date	Status at end 2014
Clare	Killaloe	Inadequate disinfection system.	04-Jul-14	Irish Water has complied with the directions
Donegal	Bundoran Urban	Inadequate response to EPA audit	03-Dec-14	
Donegal	Killybegs	Inadequate response to EPA audit	03-Dec-14	
Donegal	Rosses Regional	Inadequate response to EPA audit	03-Dec-14	
Galway	Cineal Feicin Estate, Abbey	Inadequate disinfection system.	13-Feb-14	
Galway	Clifden	Customer complaints of discoloured water	04-Jul-14	
Leitrim	Drumcong	Inadequate disinfection system.	04-Jul-14	
Roscommon	SRRWSS - Lisbrock	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	15-Aug-14	
Sligo	Lough Talt	Inadequate disinfection system.	15-Aug-14	
Donegal	Cashilard	Trihalomethane exceedances.	11-Dec-14	Action Programmes being implemented by Irish Water
Donegal	Gortahork- Falcarragh	Trihalomethane exceedances.	11-Dec-14	
Donegal	Fintown	Trihalomethane exceedances.	11-Dec-14	
Donegal	Greencastle	Trihalomethane exceedances.	11-Dec-14	
Donegal	Portnoo Narin	Trihalomethane exceedances.	11-Dec-14	
Sligo	Lough Talt	Trihalomethane exceedances.	03-Dec-14	
Galway	Carraroe	Trihalomethane exceedances.	12-May-14	The dates in the directions have not yet been reached. Compliance status will be determined after the due dates
Galway	Williamstown	Inadequate disinfection system and <i>Cryptosporidium</i> barrier.	21-Nov-14	
Laois	Ballyroan	Inadequate disinfection system.	03-Dec-14	
Longford	Newtowncashel	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	23-Sep-14	
Roscommon	Ballinlough/ Loughglynn	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	15-Aug-14	
Roscommon	Ballyfarnan	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	30-Oct-14	
Roscommon	Castlerea Regional	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	10-Jun-14	
Roscommon	Castlerea Urban	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	10-Jun-14	
Roscommon	NERWSS Strokestown/ Elphin	No <i>Cryptosporidium</i> barrier in place and no action plan submitted	10-Jun-14	
Wexford	IW pH Asset Strategy Programme	Inadequate pH levels in supplies	15-Aug-14	Direction deadline passed. Further enforcement action not currently being pursued due to verified progress with action programme/necessary works
Galway	Cleggan/ Claddaghduff	Trihalomethane exceedances.	24-Oct-14	Directions not complied with - enforcement action under consideration
Kilkenny	Callan Road, Kilmanagh	Inadequate disinfection system.	25-Aug-14	
Wexford	Tellarought	Inadequate disinfection system.	10-Jun-14	
Donegal	Rathmullen	Trihalomethane exceedances.	04-Jul-14	On-going Enforcement Action

A number of Directions issued prior to 2014 remained open and were actively pursued by the EPA during 2014. A summary of these directions and an update on their status is provided in Table 3.

Table 3: Directions issued prior to 2014 - reason for issue and status at end of 2014.

Area/ County	Supply	Reason for Direction	Issue date	Status at end 2014
Galway	Kilkerrin Moylough	No <i>Cryptosporidium</i> barrier.	26-Sep-11	Action programme being implemented by the WSA
Sligo	Lough Gill (Cairns Hill)	Trihalomethane exceedances and inadequate <i>Cryptosporidium</i> barrier.	14-Mar-13	Action programme being implemented.
Sligo	North Sligo	Iron and Turbidity exceedances	24-Sep-07	Action Programme being implemented by Irish Water.
Cork	Mallow	Replacement of WSA-owned lead pipework.	28-Sep-11	Deadlines have passed- substantial progress made. EPA supervising ongoing works until complete.
Roscommon	Boyle Ardcarne	Inadequate <i>Cryptosporidium</i> barrier- implement action plan.	5-Sep-13	
Roscommon	SRRWSS Kileglan	Inadequate <i>Cryptosporidium</i> barrier.	26-Nov-13	
Donegal	Letterkenny	Trihalomethanes exceedances.	24-Mar-11	Directions not complied with.
Kerry	Lissardboola and Lisloose	Replacement of WSA-owned lead pipework.	28-Sep-11	
Clare	O'Brien's Bridge	Inadequate disinfection system.	27-Sep-13	EPA enforcement action ongoing at the end of 2014.
Mayo	L. Mask RWSS	Trihalomethanes exceedances.	21-Apr-09	WSA prosecuted for non-compliance with Direction. EPA supervising ongoing works until complete.

In 2014, the EPA initiated **three** prosecutions in relation to Letterkenny Public Water Supply, Co. Donegal; Lissardboola and Lisloose Public Water Supply, Co. Kerry and at Treannagleeragh Public Water Supply, Co. Mayo. Summonses were withdrawn in relation to Lissardboola/Lisloose and Treannagleeragh Public Water Supplies as the necessary remedial works were complete at the time the case came before the court. Legal proceedings in relation to Letterkenny remain before the Courts.

Section 3: Private Supplies

Private supplies are operated, managed and are the responsibility of private individuals or organisations. Details of 2,691 Private supplies operating in 2014 were reported to the EPA by local authorities.

- 512 **Public Group Water Schemes** serving 86,058 people (1.9 % of population)
- 421 **Private Group Water Schemes** serving 192,312 people (4.2% of population)
- 1,758 **Small Private Supplies** serving 39,994 people (0.9% of population).

Section 3.1: Quality and Safety of Regulated Private Supplies

60,626 test results for private supplies were submitted to the EPA for assessment. The microbiological quality of private supplies, while improving, remains inferior to public supplies. The overall compliance rate for these regulated private supplies, based on sample compliance, was **97.26 %** for Microbiological parameters, **99.54 %** for Chemical parameters and **97.04%** for Indicator parameters. This compares to 2013 figures of **97.53 %** for Microbiological parameters, **99.57 %** for Chemical parameters and **97.28 %** for Indicator parameters.

A summary of compliance with the parametric limits in the regulations is set out in Appendix 2 (Public Group Water Schemes), Appendix 3 (Private Group Water Scheme) and Appendix 4 (Small Private Supplies). An explanation of the significance of each of the parameters described in the report is available at <http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwaterauditreports/parameterappendix.html>.

1,771 supplies were fully compliant for *E. coli*, but 100 supplies had samples taken that failed.

All supplies were 100% compliant for 15 of the chemical parameters. For a further two parameters (Bromate and Lead), a single sample failed each. Of the remaining parameters, 3 samples (3 supplies) failed the Copper standard²⁴, 2 samples (1 supply) failed the Selenium standard, 6 samples (4 supplies) failed the Fluoride standard, 9 samples (9 supplies) failed the nitrate standard, 6 samples (6 supplies) failed the nitrite (at tap) standard and 22 samples (22 supplies) failed the Trihalomethanes standard.

The majority of the failures set out in Appendices 2, 3 and 4 relate to “indicator” parameters. Indicator parameters are designed to provide information on the management of the treatment process, the look, taste and smell of the water. A value reported to exceed the limit for an indicator parameter should not, automatically, be considered a cause for concern but a guide for the water supplier to initiate an investigation into the cause of the elevated level of the particular parameter.

22% of the private supply test results were reported as **accredited** results compared to 34% in 2013.

The number of supplies testing positive for *E. coli* increased from 96 in 2013 to **100** in 2014. The majority of these supplies are small private supplies. For the group water sector, significant improvement has been achieved in compliance with the *E. coli* parameter in the past decade. *E. coli* compliance in the group water sector in 2014 was 98.82% compared to 85.5% in this sector in 2004. In 2014, 24 Private Group Water Schemes tested positive for *E.coli*, down from 32 in 2013 and 76 Small Private Supplies tested positive for *E.coli*, up from 63 in 2013. No Public Group Water Schemes tested positive for *E.coli* in 2014 compared with 1 supply in 2013. Further improvements are needed in small private supplies – *E.coli* compliance at 96.3% lags behind both public supplies (99.9%) and the group water sector (98.82%).

²⁴ A failure of the Copper standard is an indication of internal copper plumbing in a building or property rather than a problem with the water supply served to that building/property.

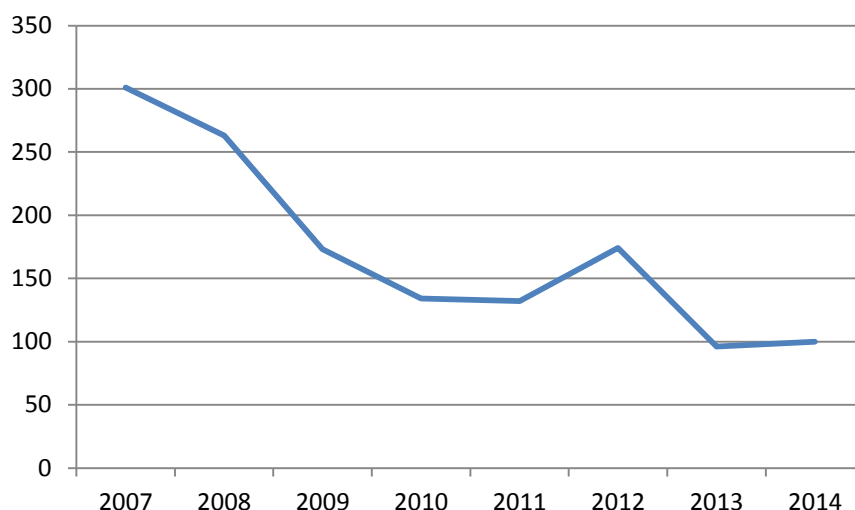


Figure 6: Trend in the number of private supplies where *E. coli* was detected.

Trihalomethanes, a by-product of the chlorination (disinfection) process, are undesirable in drinking water and their presence should be minimised while not compromising disinfection. Further details on Trihalomethanes are contained in Section 2.5.1. Compliance with the Trihalomethanes standard in private supplies remains low at **93.0 %**. The majority of supplies are in counties Cavan, Galway, Kerry, and Mayo and are detected in Private Group Water Schemes. **22** supplies exceeded the standard of 100 µg/l and **5** of these had levels of Trihalomethanes greater than 150 µg/l, with the highest result of 237 µg/l in the Brackloon / Spaddagh GWS, County Mayo.

The **lead** standard for drinking water changed on 25/12/2013 from 25 µg/l to 10 µg/l. Further details on lead are contained in Section 2.5.1. Results submitted for 2014 indicate only one supply with a lead exceedance (in County Monaghan). Given the widespread extent of lead pipework, generally, in the country water suppliers and local authorities should examine this high rate of compliance to verify that it is generated by sufficient sample numbers in appropriate, representative locations in the networks.

There are two standards for **pesticides** in the drinking water regulations, Total Pesticides (0.5 µg/l) and individual pesticides (0.1 µg/l). Neither standard was exceeded in 2014.

The standard for **nitrites** (50 mg/l) was exceeded in **9** supplies in total, 8 of which were Small Private Supplies in Cork, Kilkenny, Meath and Wexford and 1 Private Group Water Scheme in Carlow. The highest nitrite result was 74.6 mg/l in County Kilkenny. Further details on nitrites are contained in Section 2.5.1.

The **aluminium** standard of 200 µg/l was exceeded in **25** supplies during 2014, 10 Public Group Water Schemes, 6 Private Group Water Schemes and 9 Small Public Supplies. Aluminium is present in drinking water as a result of its use as aluminium sulphate (a coagulant) in the water treatment process, though it can be naturally present in some waters. See section 2.1 for further details on aluminium.

The **turbidity** limit of 1.0 NTU at the treatment plant was exceeded in **11** supplies. The control of turbidity is one of the indicators of the efficiency of treatment at the plant. Elevated levels of turbidity in the treated water indicate that the treatment process is not operating adequately. It also provides a good indication of whether the treatment plant is capable of removing *Cryptosporidium* oocysts. See section 2.1 for further details on turbidity.

Section 3.2: Enforcement and Security of Regulated Private Supplies

Local authorities are the supervisory authorities for private water supplies. The results from 2014 demonstrate that there are compliance challenges in this sector. In particular improvements are needed in small private supplies. *E. coli* was detected in **76** small private supplies compared to detection in **24** group schemes (down from 33 in 2013). While the detections in small private supplies were down from 147 in 2012 the numbers found with *E. coli* are still not acceptable and are up from 63 in 2013.

Water quality in the private water supply sector lags significantly behind the quality in the public network. Local authorities should use the powers available to them under the drinking water regulations to drive improvements in water quality. Local authorities should ensure that private water supplies are appropriately monitored for the parameters in the Drinking Water Regulations 2014, in particular for microbiological parameters.

Cryptosporidium results were not submitted for private supplies in 2014. *Cryptosporidium* is not one of the 48 parameters listed in the drinking water regulations, for which monitoring is specified. However, the EPA has through the *EPA Advice Note No. 9: Cryptosporidium Sampling and Monitoring* provided guidance on *Cryptosporidium* monitoring. During 2013 the notification of *Cryptosporidium* detections was only required in cases where the local authority, in consultation, with the HSE considered the supply a potential danger to human health. This requirement has now changed and under the 2014 regulations water suppliers should notify their supervisory authority of any detections of *Cryptosporidium* in the supply.

The National Federation of Group Water Schemes (NFGWS) provides a key role in improving group water schemes and in the provision of guidance and training to the operators of these schemes. Recently the NFGWS have published a guide to the implementation of Quality Assurance (HACCP) System for the group water sector. This practical guidance provides essential advice to operators on managing and monitoring their supplies. The guide follows the principles of the Water Safety Plan approach.

Section 3.3: Exempted Private Supplies

Private water supplies providing water to individual private dwellings are exempt from regulation. It is estimated that **30%** of private wells in Ireland are contaminated by *E. coli* arising from animal or human waste. The HSE has reported a growing number of cases of VTEC – a pathogenic form of *E.coli*. Analysis of cases shows that patients are up to **four times** more likely to have consumed untreated water from private wells.

Ireland has the highest incidence of VTEC in Europe. Since 2011, the HSE has reported a doubling of the number of VTEC cases in Ireland (284 in 2011, 554 in 2012, 704 in 2013 and 713 in 2014). Animals, particularly cattle are the main source of VTEC and infection is spread either from direct animal contact or through contaminated food and water. Person to person spread is also common. In other countries the most common source of infection is through food outbreaks.

In Ireland, rural families are commonly affected and much of this is because of contaminated private wells. Consumers of water from private wells at much greater risk of VTEC than those who drink water from mains supplies.

Disinfection kills all *E. coli* including VTEC and, while public water supplies are disinfected, not all private wells are. The EPA is providing easy to use information at <http://www.epa.ie/water/dw/hhinfo/> explaining what well owners should do to protect their health. The information includes a short animation to explain the risks to well water quality and the simple things that can be done to reduce the risks.

A 'Protect your Well' assessment app is now available at <http://erc.epa.ie/water/wells/>. Well owners can assess whether their wells are at risk in less than 10 minutes using this simple app. It provides well owners with tailored advice on how they can reduce the risk of contamination in their well.

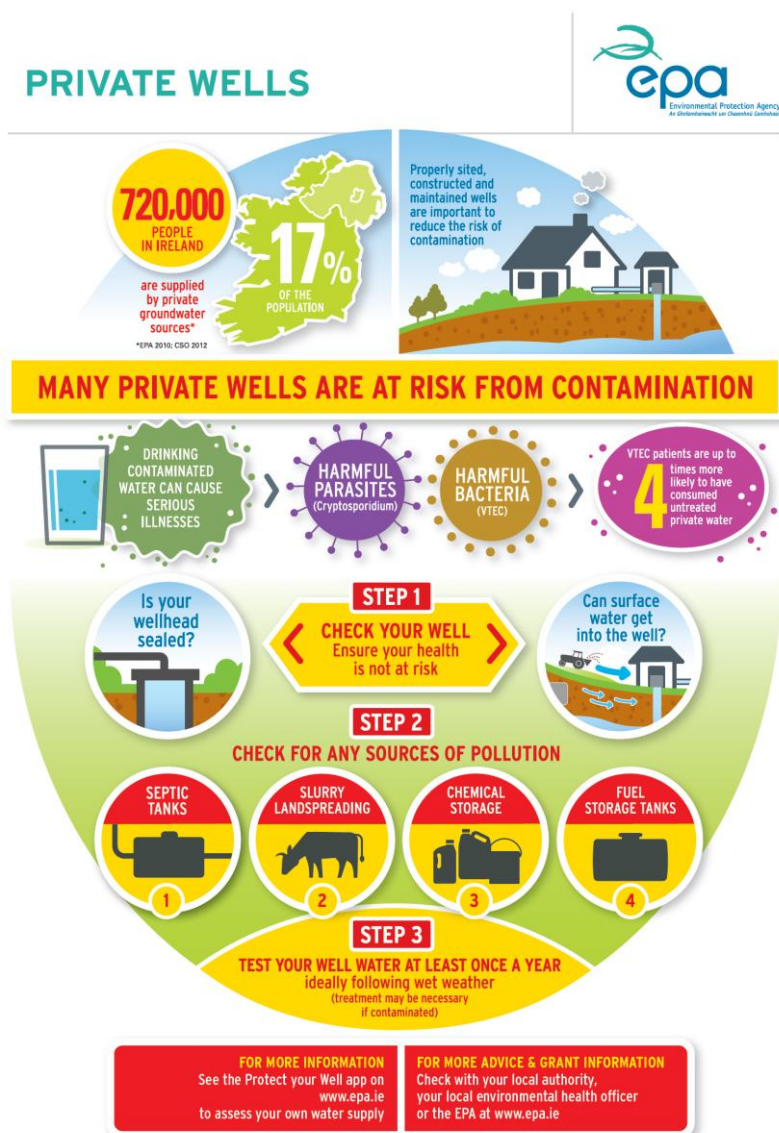


Figure 7: EPA Infographic on Private Wells

Section 4: Concluding Remarks and Recommended Actions

Conclusions and recommendations made in this report are based on the EPA's findings on drinking water quality during 2014, on findings from EPA audits and on the need to implement the requirements of the Drinking Water Regulations which implement the Drinking Water Directive in Ireland. Previous EPA reports have contained similar recommendations and, while progress has been made in some areas, others have been delayed by the underinvestment in water services over many years.

Section 4.1: Public Water Supplies

2014 was Irish Water's first year of responsibility for the production, distribution and monitoring of drinking water from public water supplies in Ireland. The year saw significant work progressed by Irish Water towards reducing the numbers of consumers affected by **boil water notices**. A number of projects ongoing during 2014 saw long-term boil water notices lifted in the 2015 period. Reduction in the number of supplies on the **Remedial Action List**, however, remains an area requiring further progress, with slippage in estimated completion dates noted.

Irish Water is adopting the **Water Safety Plan approach** to manage drinking water supplies. This reflects a holistic and active view to the management of **risk** and improving the system's resilience. Irish Water has used the national utility structure to deal with a range of risks to drinking water supply by developing national and regional strategic plans.

A number of areas for strategic action have been highlighted by the EPA in previous reports and are now recognised and being progressed by Irish Water.

- One such strategy is the **Irish Water Lead Strategy** which was published by Irish Water in June 2015. This forms part of a National Lead Strategy published by the Department of Environment, Communities and Local Government. The strategy sets out the major objectives and actions envisaged towards achieving the long-term national objective of reducing consumer exposure to lead. The EPA has actively engaged with Irish Water on the development of this strategy during 2014 and 2015.
- In addition to lead, a significant number of supplies for which Irish Water is responsible are affected by other major water quality issues meriting the development of other National strategies. Levels in excess of the limits set by the Drinking Water Regulations for parameters such as **trihalomethanes** and **pesticides** are issues that require the development of consistent, strategic approaches.
 - For trihalomethanes, a comprehensive and systematic **review of chemical dosing** and treatment processes, in parallel with **raw water monitoring**, should be implemented. Supplies with exceedances should be prioritised for review.
 - For pesticides and other source-protection-related contaminants, an entirely new series of **catchment-based engagement** efforts needs to be devised and take place, organised and instructed by a national strategy.
- The findings of EPA audits during 2014 show that **disinfection** systems remain an area of water treatment requiring attention. A **National Disinfection Strategy** is required to ensure appropriate disinfection at the treatment plant and to **safeguard treated water quality** in reservoirs and distribution networks.
- In managing drinking water supplies and risk, the quality and representativeness of monitoring data captured is critical. Irish Water needs to comprehensively review the national **monitoring programme** for public supplies to ensure appropriate sampling frequency, sampling locations and accreditation of results. Findings of such a review should inform a strategy to streamline monitoring

and analysis across the country leading also to improving the timeliness of reporting results to the public.

For each strategy developed, an associated **implementation plan** with timeframes and milestones towards meeting the interim and ultimate strategy objectives should be prepared and realised. Measures to improve quality and consistency of **management** and operation of water supplies by Irish Water will be critical.

As the drinking water quality regulator, the EPA will continue to update, track and report the number of supplies on the Remedial Action List; drinking water exceedance notifications; active boil water notices on public water supplies; supplies with no *Cryptosporidium* barriers, the number of water safety plans in place and findings of EPA audits. In addition, however, the EPA will report on Irish Water's **progress in the implementation of its strategies and plans and response to incidents** in future drinking water reports.

A summary of specific actions recommended for Public Water Supplies is provided below.

Priority Actions	<p>Irish Water as the national utility for public water supplies must develop a series of national plans, programmes and strategies to ensure the safety and security of public supplies into the future.</p> <ul style="list-style-type: none"> • Ensure the Capital Investment Plan provides investment to address all boil water notices, water restrictions and supplies on the Remedial Action List. • Develop and implement a national disinfection strategy. • Implement the national lead strategy to ensure compliance with the lead standard. • Develop and implement a national pesticides strategy to reduce pesticides exceedances. • Develop and implement a national trihalomethanes strategy to reduce trihalomethane exceedances. • Implement the Water Safety Plan approach in all supplies and as a guide to future capital investment. • Develop and implement National Drinking Water Incident Response Plans to cover emergency situations.
Source Protection	<ul style="list-style-type: none"> • Engage with stakeholders and develop catchment-based measures (including water safety plans) aimed at improving the quality of drinking water sources including specific measures to address risk from pesticide use and excess nitrate run-off in drinking water catchments. • Implement raw water monitoring programmes to inform treatment system design, operation and management.
Treatment Plants	<ul style="list-style-type: none"> • Continue the elimination (and prevention) of supplies on long-term boil water notices and restrictions as a matter of priority by fast tracking the necessary improvement works. <ul style="list-style-type: none"> - Provide Cryptosporidium barriers on all surface water or surface water-influenced groundwater supplies. - Meet the disinfection criteria as published by the EPA. • Publish comprehensive programmes, with timeframes for key milestones, for EPA Remedial Action List supplies. • Implement an optimisation programme for chemical dosing and review/upgrade of chemical dosing processes in supplies in order to reduce trihalomethanes and aluminium exceedances. • Implement adequate out of hours response backed up by suitable, real-time monitoring of process parameters and response to alarms. • Deliver resilient treatment plants able to cope with severe weather and changes in the nature of raw water sources.

	<ul style="list-style-type: none"> Develop a structure for minimum qualification, training and experience standards for water service employees in key operations positions (for example supervisors and plant operators).
Distribution Network	<ul style="list-style-type: none"> Develop and implement a national programme for reservoir protection (including works to safeguard post-treatment water, inspection, cleaning and maintenance). Develop and implement a national mains cleaning and maintenance programme. Identify and remediate pipelines with regular bursts and colour issues.
Management, Control and Communications	<ul style="list-style-type: none"> Implement measures to improve quality and consistency of management and operation of water supplies. Monitor all public supplies for <i>E. coli</i>. Use accredited laboratories to analyse all monitoring results submitted to the EPA after 2015. Improve communications between Irish Water and local authority personnel on the management and operation of public supplies. Provide comprehensive and timely information to the EPA on progress made with supplies on the Remedial Action List and on investigations into exceedances of the parametric values.

In **conclusion**, this report reflects historic deficiency and national inconsistency in capital and operational investment and sets out the challenges now faced by Irish Water after its first year as Ireland's largest producer of drinking water. As these challenges are tackled, Irish Water's capability for enhanced asset management, increased capital investment is to be regarded as a significant opportunity to improve efficiency and resolve historic issues.

In this context, continued and increased investment in Ireland's public drinking water sector, remains imperative, prioritising supplies subject to boil water /restriction notices and supplies on the RAL whilst also having regard to preventative investment where risk assessments identify it is most needed.

Section 4.2: Private Water Supplies

The recommendations, below, cover private water supplies and are aimed at the water supplier and local authorities as the supervisory authority for these supplies.

Private Water Supplies	<ul style="list-style-type: none">• Monitor all private supplies for <i>E.coli</i>. Local authorities should assess the appropriateness of monitoring of private water supplies for the parameters in the Drinking Water Regulations 2014.• Investigate all failures to meet the microbiological, chemical and indicator parametric values in private water supplies to ensure that the cause of the failure is identified and the appropriate corrective action is taken.• Appropriate enforcement action should be taken by local authorities where there is evidence or where investigations indicate it is required.• Implementation of the guidance developed by the National Federation of Group Water Schemes on Quality Assurance (HACCP) System should be undertaken by Group Water Schemes.• Undertake a programme of monitoring for <i>Cryptosporidium</i> and lead in private supplies to determine the extent of its presence.
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Section 4.3: Exempted Supplies (individual private supplies)

The recommendations, below, cover exempted supplies and are aimed at the owners of individual supplies such as wells and boreholes.

Exempted supplies – individual private supplies	<ul style="list-style-type: none">• Well owners should check their wells to ensure that their health is not at risk: This includes checking that there are no sources of pollution entering the well and testing the water, at least once a year, ideally following heavy rain when the well is most at risk of contamination. The EPA has provided easy to use information at http://www.epa.ie/water/dw/hhinfo/ explaining what well owners should do to protect their health.
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Figure 8: EPA Infographic on Private Wells

Section 5: Appendices

Appendices 1, 2, 3 and 4 list compliance results and percentages for four groups of regulated drinking water supplies:

- Public Water Supplies
- Public Group Schemes
- Private Group Schemes
- Small Private Supplies.

Appendix 5 lists Boil Notices and Water Restriction Notices in place on Public Water Supplies during 2014.

Appendix 6 lists, for each county or area the details of Remedial Action List supplies.

Appendix 7 lists, for each county or area, the microbiological and chemical compliance rates in public supplies, the number of boil notice and water restrictions and population affected and selected enforcement information (audits, directions, RAL).

Appendix 1: Public Water Supplies – Zones Monitored and Samples Analysed in 2014

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
<i>E. coli</i>	963	8	99.2	10068	8	99.9
<i>Enterococci</i>	612	4	99.3	1622	4	99.8
Chemical						
1,2-dichloroethane	599	0	100	1191	0	100
Antimony	528	1	99.8	1117	1	99.9
Arsenic	529	0	100	1181	0	100
Benzene	600	0	100	1193	0	100
Benzo(a)pyrene	545	0	100	1064	0	100
Boron	537	0	100	1150	0	100
Bromate	622	0	100	1184	0	100
Cadmium	590	0	100	1258	0	100
Chromium	590	0	100	1257	0	100
Copper	628	1	99.8	1432	1	99.9
Cyanide	470	0	100	970	0	100
Fluoride	678	24	96.5	3045	37	98.8
Lead	724	31	95.7	2193	39	98.2
Mercury	528	0	100	1096	0	100
Nickel	626	0	100	1315	0	100
Nitrate	744	4	99.5	3750	8	99.8
Nitrite (at tap)	679	0	100	4059	0	100
Nitrites (at WTW)	96	0	100	514	0	100
PAH	545	1	99.8	1065	1	99.9
Pesticides - Total	598	4	99.3	1163	4	99.7
Selenium	528	0	100	1132	0	100
Tetrachloroethene & Trichloroethene	599	0	100	1190	0	100
Total Trihalomethanes	635	59	90.7	1520	106	93.0
Indicator						
Aluminium	722	32	95.6	7360	75	99.0
Ammonium	964	6	99.4	10020	9	99.9
Chloride	658	1	99.8	1380	1	99.9
Clostridium perfringens	700	10	98.6	8227	13	99.8
Coliform Bacteria	963	84	91.3	10067	131	98.7
Colony Count @ 22°C	626	10	98.4	1434	10	99.3
Colour	964	59	93.9	10242	104	99.0
Conductivity	955	0	100	10527	0	100
Iron	791	43	94.6	6525	102	98.4
Manganese	638	19	97.0	2244	24	98.9
Odour	940	0	100	9886	0	100
pH	964	162	83.2	10457	307	97.1
Sodium	639	2	99.7	1295	2	99.8
Sulphate	615	0	100	1238	0	100
Taste	937	5	99.5	9561	5	99.9
Total Organic Carbon	571	10	98.2	1169	10	99.1
Turbidity (at tap)	964	23	97.6	10260	28	99.7
Turbidity (at WTW)	156	16	89.7	1232	22	98.2
Radioactivity						
Total Indicative Dose	27	0	100	51	0	100
Tritium	27	0	100	55	0	100

Appendix 2: Public Group Water Schemes – Zones Monitored and Samples Analysed in 2014

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
<i>E. coli</i>	430	0	100	1051	0	100
<i>Enterococci</i>	35	0	100	36	0	100
Chemical						
1,2-dichloroethane	54	0	100	55	0	100
Antimony	54	0	100	56	0	100
Arsenic	55	0	100	63	0	100
Benzene	54	0	100	55	0	100
Benzo(a)pyrene	54	0	100	55	0	100
Boron	60	0	100	65	0	100
Bromate	78	0	100	96	0	100
Cadmium	55	0	100	63	0	100
Chromium	55	0	100	63	0	100
Copper	62	0	100	70	0	100
Cyanide	46	0	100	47	0	100
Fluoride	113	2	98.2	211	2	99.1
Lead	80	0	100	108	0	100
Mercury	54	0	100	56	0	100
Nickel	62	0	100	70	0	100
Nitrate	94	0	100	206	0	100
Nitrite (at tap)	247	0	100	504	0	100
Nitrites (at WTW)	58	0	100	128	0	100
PAH	54	0	100	55	0	100
Pesticides - Total	61	0	100	62	0	100
Selenium	54	0	100	60	0	100
Tetrachloroethene & Trichloroethene	54	0	100	55	0	100
Trihalomethanes (Total)	66	5	92.4	72	5	93.1
Indicator						
Aluminium	320	10	96.9	727	11	98.5
Ammonium	430	2	99.5	1044	2	99.8
Chloride	61	0	100	63	0	100
Clostridium perfringens	391	2	99.5	930	2	99.8
Coliform Bacteria	430	18	95.8	1048	19	98.2
Colony Count @ 22°C	63	3	95.2	65	3	95.4
Colour	430	9	97.9	1047	17	98.4
Conductivity	413	0	100	1010	0	100
Iron	291	6	97.9	598	10	98.3
Manganese	101	1	99.0	160	1	99.4
Odour	410	0	100	1008	0	100
pH	430	9	97.9	1048	12	98.9
Sodium	61	0	100	67	0	100
Sulphate	61	0	100	63	0	100
Taste	410	0	100	1001	0	100
Total Organic Carbon	61	1	98.4	63	1	98.4
Turbidity (at tap)	430	5	98.8	1048	5	99.5
Turbidity (at WTW)	61	8	86.9	143	8	94.4

Appendix 3: Private Group Water Schemes – Zones Monitored and Samples Analysed in 2014

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
<i>E. coli</i>	400	24	94	1410	29	97.9
<i>Enterococci</i>	214	5	97.7	235	5	97.9
Chemical						
1,2-dichloroethane	158	0	100	165	0	100
Antimony	158	0	100	193	0	100
Arsenic	159	0	100	194	0	100
Benzene	158	0	100	165	0	100
Benzo(a)pyrene	158	0	100	163	0	100
Boron	231	0	100	266	0	100
Bromate	231	1	99.6	236	1	99.6
Cadmium	158	0	100	193	0	100
Chromium	158	0	100	193	0	100
Copper	233	1	99.6	276	1	99.6
Cyanide	156	0	100	161	0	100
Fluoride	227	1	99.6	263	1	99.6
Lead	237	1	99.6	338	1	99.7
Mercury	157	0	100	162	0	100
Nickel	231	0	100	266	0	100
Nitrate	286	1	99.7	534	1	99.8
Nitrite (at tap)	307	0	100	815	0	100
Nitrites (at WTW)	6	0	100	12	0	100
PAH	158	0	100	163	0	100
Pesticides - Total	219	0	100	224	0	100
Selenium	158	1	99.4	197	2	99.0
Tetrachloroethene & Trichloroethene	158	0	100	165	0	100
Trihalomethanes (Total)	232	17	92.7	252	17	93.3
Indicator						
Aluminium	313	6	98.1	950	6	99.4
Ammonium	400	1	99.8	1385	5	99.6
Chloride	232	0	100	237	0	100
Clostridium perfringens	323	9	97.2	1055	10	99.1
Coliform Bacteria	400	58	85.5	1408	73	94.8
Colony Count @ 22°C	231	8	96.5	236	8	96.6
Colour	400	23	94.3	1407	28	98.0
Conductivity	400	0	100	1384	0	100
Iron	316	8	97.5	886	12	98.6
Manganese	243	11	95.5	374	13	96.5
Odour	390	0	100	1349	0	100
pH	400	25	93.8	1407	40	97.2
Sodium	232	0	100	268	0	100
Sulphate	231	1	99.6	236	1	99.6
Taste	378	0	100	1314	0	100
Total Organic Carbon	229	2	99.1	234	2	99.1
Turbidity (at tap)	399	5	98.7	1414	6	99.6
Turbidity (at WTW)	19	3	84.2	25	3	88

Appendix 4: Small Private Supplies – Zones Monitored and Samples Analysed in 2014

Parameter	No. of Zones Monitored	No of Zones with Exceedances	% of Zones Complying	No. of Samples Analysed	No. of Samples Exceeding	% of Samples Complying
Microbiological						
<i>E. coli</i>	1041	76	92.7	1605	79	95.1
<i>Enterococci</i>	410	21	94.9	589	22	96.3
Chemical						
1,2-dichloroethane	18	0	100	19	0	100
Antimony	18	0	100	19	0	100
Arsenic	20	0	100	21	0	100
Benzene	20	0	100	23	0	100
Benzo(a)pyrene	20	0	100	23	0	100
Boron	51	0	100	61	0	100
Bromate	19	0	100	21	0	100
Cadmium	23	0	100	26	0	100
Chromium	22	0	100	25	0	100
Copper	249	2	99.2	271	2	99.3
Cyanide	18	0	100	19	0	100
Fluoride	24	1	95.8	28	3	89.3
Lead	296	0	100	371	0	100
Mercury	18	0	100	19	0	100
Nickel	23	0	100	26	0	100
Nitrate	767	8	99.0	1056	8	99.2
Nitrite (at tap)	618	6	99.0	965	6	99.4
PAH	20	0	100	23	0	100
Pesticides - Total	29	0	100	30	0	100
Selenium	19	0	100	20	0	100
Tetrachloroethene & Trichloroethene	18	0	100	19	0	100
Trihalomethanes (Total)	18	0	100	19	0	100
Indicator						
Aluminium	315	9	97.1	597	10	98.3
Ammonium	1025	17	98.3	1561	25	98.4
Chloride	150	4	97.3	197	5	97.5
Clostridium perfringens	437	16	96.3	640	18	97.2
Coliform Bacteria	1041	230	77.9	1605	261	83.7
Colony Count @ 22°C	24	4	83.3	25	4	84
Colour	1028	45	95.6	1565	53	96.6
Conductivity	1030	1	99.9	1568	1	99.9
Iron	654	51	92.2	1031	58	94.4
Manganese	337	39	88.4	408	47	88.5
Odour	977	1	99.9	1464	2	99.9
pH	1030	190	81.6	1569	249	84.1
Sodium	104	11	89.4	146	12	91.8
Sulphate	85	0	100	111	0	100
Taste	580	6	99.0	853	7	99.2
Total Organic Carbon	13	1	92.3	14	1	92.9
Turbidity (at tap)	971	42	95.7	1502	51	96.6
Radioactivity						
Total Indicative Dose	7	0	100	7	0	100
Tritium	7	0	100	7	0	100

Appendix 5: Boil Notices and Water Restrictions in place on Public Water Supplies during 2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Clare	Corofin	Other	WR	1,550	Full	14/08/2014	22/08/2014
Clare	Ennis	Lead	WR	618	Part	07/10/2008	
Clare	Ennistymon	Coliform Bacteria	BN	200	Part	23/07/2014	29/07/2014
Clare	Killadysert	Manganese	WR	1,500	Full	29/07/2014	22/08/2014
Cork	Aghabullogue	Precautionary - No Exceedance	BN	165	Full	13/02/2014	17/02/2014
Cork	Aghavrin	Precautionary - No Exceedance	BN	60	Full	13/02/2014	15/02/2014
Cork	Allow Regional	Precautionary - No Exceedance	BN	3,580	Full	13/02/2014	14/02/2014
Cork	An Faithin Est. Tarelton	<i>E. coli</i>	BN	30	Full	01/07/2008	01/08/2014
Cork	Ard Na Killy Ridge	Precautionary - No Exceedance	BN	50	Full	13/02/2014	14/02/2014
Cork	Ballinagree	Precautionary - No Exceedance	BN	150	Full	13/02/2014	14/02/2014
Cork	Ballinamona	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Ballingeary	Precautionary - No Exceedance	BN	500	Full	13/02/2014	15/02/2014
Cork	Ballyclough & Mount North	Precautionary - No Exceedance	BN	2,156	Full	13/02/2014	17/02/2014
Cork	Ballydesmond	Precautionary - No Exceedance	BN	300	Full	13/02/2014	14/02/2014
Cork	Ballymakerra	Precautionary - No Exceedance	BN	600	Full	13/02/2014	14/02/2014
Cork	Ballyverane	Precautionary - No Exceedance	BN	8	Full	13/02/2014	15/02/2014
Cork	Bandon Regional	Precautionary - No Exceedance	BN	9,877	Full	13/02/2014	14/02/2014
Cork	Bantry Cahernacrin	Precautionary - No Exceedance	BN	1,382	Full	13/02/2014	14/02/2014
Cork	Bantry Derryginagh	Precautionary - No Exceedance	BN	1,287	Full	13/02/2014	14/02/2014
Cork	Bayview	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Belgooly	Precautionary - No Exceedance	BN	700	Full	13/02/2014	14/02/2014
Cork	Boherascrub	Precautionary - No Exceedance	BN	19	Full	13/02/2014	15/02/2014
Cork	Bottlehill	Precautionary - No Exceedance	BN	96	Full	13/02/2014	14/02/2014
Cork	Box Cross	Precautionary - No Exceedance	BN	5,400	Full	13/02/2014	14/02/2014
Cork	Burnfort	Precautionary - No Exceedance	BN	100	Full	13/02/2014	17/02/2014
Cork	Caherbarnagh	Precautionary - No Exceedance	BN	256	Full	13/02/2014	15/02/2014
Cork	Carrigcleena	Precautionary - No Exceedance	BN	40	Full	13/02/2014	15/02/2014
Cork	Carrignadoura	Precautionary - No Exceedance	BN	20	Full	13/02/2014	15/02/2014
Cork	Castlecooke	Precautionary - No Exceedance	BN	40	Full	13/02/2014	14/02/2014
Cork	Castletownbere	Precautionary - No Exceedance	BN	2,130	Full	13/02/2014	14/02/2014
Cork	Clashanamid	Precautionary - No Exceedance	BN	80	Full	13/02/2014	14/02/2014
Cork	Clonakilty	Precautionary - No Exceedance	BN	16,708	Full	13/02/2014	14/02/2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Cork	Clondrohid	Precautionary - No Exceedance	BN	200	Full	13/02/2014	14/02/2014
Cork	Cluin Court Allihies	Coliform Bacteria	BN	30	Full	30/01/2013	01/08/2014
Cork	Coolineagh	Precautionary - No Exceedance	BN	20	Full	13/02/2014	15/02/2014
Cork	Coolyhane	Precautionary - No Exceedance	BN	50	Full	13/02/2014	14/02/2014
Cork	Crookstown	Lead	WR	159	Part	05/10/2010	
Cork	Doneraile	Precautionary - No Exceedance	BN	2,306	Full	13/02/2014	14/02/2014
Cork	Drimoleague	Precautionary - No Exceedance	BN	825	Full	13/02/2014	17/02/2014
Cork	Dromore Bantry	Precautionary - No Exceedance	BN	50	Full	13/02/2014	15/02/2014
Cork	Dunmanway	Precautionary - No Exceedance	BN	2,000	Full	13/02/2014	14/02/2014
Cork	Fermoy	Precautionary - No Exceedance	BN	8,845	Full	13/02/2014	14/02/2014
Cork	Garranes	Precautionary - No Exceedance	BN	88	Full	13/02/2014	14/02/2014
Cork	Glanworth	Precautionary - No Exceedance	BN	900	Full	13/02/2014	14/02/2014
Cork	Glashaboy	Lead	WR	150	Part	11/11/2008	
Cork	Glashaboy	Lead	WR	6	Part	07/11/2014	
Cork	Glenduff	<i>E. coli</i>	BN	10	Part	13/03/2014	20/03/2014
Cork	Gortnaskehy	Precautionary - No Exceedance	BN	35	Full	13/02/2014	15/02/2014
Cork	Inchigeelagh	Precautionary - No Exceedance	BN	150	Full	13/02/2014	15/02/2014
Cork	Innishannon	Precautionary - No Exceedance	BN	21,522	Full	13/02/2014	14/02/2014
Cork	Kilbrin Garran An Darra	Precautionary - No Exceedance	BN	324	Full	13/02/2014	15/02/2014
Cork	Kilclare	Precautionary - No Exceedance	BN	30	Full	13/02/2014	14/02/2014
Cork	Kilcrohane	Precautionary - No Exceedance	BN	195	Full	13/02/2014	14/02/2014
Cork	Kildorrery	Precautionary - No Exceedance	BN	750	Full	13/02/2014	14/02/2014
Cork	Kilmurry (Mitchelstown)	Precautionary - No Exceedance	BN	61	Full	13/02/2014	14/02/2014
Cork	Kilmurry/Clonmacow	Precautionary - No Exceedance	BN	200	Full	13/02/2014	14/02/2014
Cork	Kilnagurteen (Macroom)	Precautionary - No Exceedance	BN	120	Full	13/02/2014	14/02/2014
Cork	Kilnamartyra	Precautionary - No Exceedance	BN	250	Full	13/02/2014	14/02/2014
Cork	Kiskeam	Precautionary - No Exceedance	BN	168	Full	13/02/2014	15/02/2014
Cork	Knockanevin	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Knockanleigh	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Knockbrack	Precautionary - No Exceedance	BN	60	Full	13/02/2014	17/02/2014
Cork	Knockburden	Precautionary - No Exceedance	BN	46	Full	13/02/2014	14/02/2014
Cork	Knockdrumacloagh	Precautionary - No Exceedance	BN	80	Full	13/02/2014	15/02/2014
Cork	Knockeragh	Precautionary - No Exceedance	BN	21	Full	13/02/2014	14/02/2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Cork	Knoppogue	Precautionary - No Exceedance	BN	40	Full	13/02/2014	17/02/2014
Cork	Labbamollogga	Precautionary - No Exceedance	BN	40	Full	13/02/2014	14/02/2014
Cork	Lombardstown/Glantane	Precautionary - No Exceedance	BN	300	Full	13/02/2014	14/02/2014
Cork	Macronev	Precautionary - No Exceedance	BN	40	Full	13/02/2014	17/02/2014
Cork	Minane Bridge	Precautionary - No Exceedance	BN	55	Full	13/02/2014	14/02/2014
Cork	Monabricka	Precautionary - No Exceedance	BN	30	Full	13/02/2014	15/02/2014
Cork	Monee	Precautionary - No Exceedance	BN	60	Full	13/02/2014	17/02/2014
Cork	Mossgrove	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Mountain Barracks	Precautionary - No Exceedance	BN	16	Full	13/02/2014	14/02/2014
Cork	Newcestown	Precautionary - No Exceedance	BN	245	Full	13/02/2014	14/02/2014
Cork	Parkmore	Precautionary - No Exceedance	BN	40	Full	13/02/2014	14/02/2014
Cork	Rahan	Precautionary - No Exceedance	BN	350	Full	13/02/2014	14/02/2014
Cork	Ratharoon	Precautionary - No Exceedance	BN	20	Full	13/02/2014	14/02/2014
Cork	Rockchapel	Precautionary - No Exceedance	BN	150	Full	13/02/2014	17/02/2014
Cork	Rylane	Precautionary - No Exceedance	BN	322	Full	13/02/2014	14/02/2014
Cork	Schull	Precautionary - No Exceedance	BN	1,760	Full	13/02/2014	15/02/2014
Cork	Skahanagh	Precautionary - No Exceedance	BN	100	Full	13/02/2014	17/02/2014
Cork	Skibbereen Ballyhilty	Other	BN	80	Part	14/01/2014	18/01/2014
Cork	Skibbereen Ballyhilty	Precautionary - No Exceedance	BN	11,197	Full	13/02/2014	15/02/2014
Cork	Stagmount	Precautionary - No Exceedance	BN	8	Full	13/02/2014	15/02/2014
Cork	Templemartin	Precautionary - No Exceedance	BN	88	Full	13/02/2014	14/02/2014
Cork	Whitechurch	Precautionary - No Exceedance	BN	45	Full	13/02/2014	15/02/2014
Cork	Youghal Regional	Precautionary - No Exceedance	BN	11,286	Full	13/02/2014	14/02/2014
Dun Laoghaire Rathdown	Dlr_Zone2	<i>E. coli</i>	BN	3	Part	27/06/2014	02/07/2014
Galway	Williamstown Ps	Turbidity (at WTW)	BN	1,020	Full	30/10/2014	
Kerry	An Baile Breach 092d	Precautionary - No Exceedance	BN	140	Full	13/02/2014	18/02/2014
Kerry	An Baile Mór 012d	Precautionary - No Exceedance	BN	1,040	Full	13/02/2014	18/02/2014
Kerry	An Ceapaigh Thiar 021d	Precautionary - No Exceedance	BN	80	Full	13/02/2014	18/02/2014
Kerry	An Clochán 028d	Precautionary - No Exceedance	BN	120	Full	13/02/2014	18/02/2014
Kerry	An Fheothanach	Precautionary - No Exceedance	BN	260	Full	13/02/2014	18/02/2014
Kerry	An Ghleann 039h	Precautionary - No Exceedance	BN	60	Full	13/02/2014	18/02/2014
Kerry	An Ghráig/Cloichear 043d	Precautionary - No Exceedance	BN	120	Full	13/02/2014	18/02/2014
Kerry	An Mhín Aird No . 1 060d	Precautionary - No Exceedance	BN	270	Full	13/02/2014	18/02/2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Kerry	An Mhín Aird No. 3 090d	Precautionary - No Exceedance	BN	200	Full	13/02/2014	18/02/2014
Kerry	An Mhuiríoch/Baile Breach 063d	Precautionary - No Exceedance	BN	450	Full	13/02/2014	18/02/2014
Kerry	Baile An Fheirtéaraigh 011d	Precautionary - No Exceedance	BN	550	Full	13/02/2014	18/02/2014
Kerry	Baile An Sceilg 008h	Precautionary - No Exceedance	BN	960	Full	13/02/2014	18/02/2014
Kerry	Baile Na Bhfionnúrach 006d	Precautionary - No Exceedance	BN	90	Full	13/02/2014	18/02/2014
Kerry	Breanlee 088a	Precautionary - No Exceedance	BN	800	Full	13/02/2014	18/02/2014
Kerry	Caherdaniel 019h	Precautionary - No Exceedance	BN	390	Full	13/02/2014	18/02/2014
Kerry	Caragh Lake 022a	Precautionary - No Exceedance	BN	1,860	Full	13/02/2014	18/02/2014
Kerry	Castlecove 023h	Precautionary - No Exceedance	BN	370	Full	13/02/2014	18/02/2014
Kerry	Castlegregory 024d	Precautionary - No Exceedance	BN	1,220	Full	13/02/2014	18/02/2014
Kerry	Cathair Bó Sine 018d	Precautionary - No Exceedance	BN	50	Full	13/02/2014	18/02/2014
Kerry	Cé Bhréannain 015d	Precautionary - No Exceedance	BN	80	Full	13/02/2014	18/02/2014
Kerry	Ceann Trá 074d	Precautionary - No Exceedance	BN	530	Full	13/02/2014	18/02/2014
Kerry	Central Regional: Lissardboola 404f*	Lead	WR	72	Part	28/11/2014	
Kerry	Dún Chaoin 034d	Precautionary - No Exceedance	BN	280	Full	13/02/2014	18/02/2014
Kerry	Emlaghpeasta 035h	Precautionary - No Exceedance	BN	190	Full	13/02/2014	18/02/2014
Kerry	Fán 036d	Precautionary - No Exceedance	BN	40	Full	13/02/2014	18/02/2014
Kerry	Glenbeigh 040a	Precautionary - No Exceedance	BN	40	Full	13/02/2014	18/02/2014
Kerry	Glenderry 076e	Precautionary - No Exceedance	BN	110	Full	13/02/2014	18/02/2014
Kerry	Kenmare 045a	Inadequate Disinfection	BN	20	Part	28/07/2009	15/01/2014
Kerry	Lauragh 051a	Precautionary - No Exceedance	BN	80	Full	13/02/2014	18/02/2014
Kerry	Lios Cearnaigh 052d	Precautionary - No Exceedance	BN	30	Full	13/02/2014	18/02/2014
Kerry	Maulin 066h	Precautionary - No Exceedance	BN	620	Full	13/02/2014	18/02/2014
Kerry	Mountain Stage 062a	Inadequate Disinfection	BN	9	Part	28/07/2009	19/12/2014
Kerry	Mountain Stage 062a	Precautionary - No Exceedance	BN	1,080	Full	13/02/2014	18/02/2014
Kerry	Portmagee 064h	Precautionary - No Exceedance	BN	980	Full	13/02/2014	18/02/2014
Kerry	Rathmore 065a	Precautionary - No Exceedance	BN	850	Full	13/02/2014	18/02/2014
Kerry	Shrone 078a	Precautionary - No Exceedance	BN	210	Full	13/02/2014	18/02/2014
Kerry	Sneem 068a	Precautionary - No Exceedance	BN	470	Full	13/02/2014	18/02/2014
Kerry	Templenoe 073a	Precautionary - No Exceedance	BN	220	Full	13/02/2014	18/02/2014
Kerry	Tír Abhainn 072d	Precautionary - No Exceedance	BN	20	Full	13/02/2014	18/02/2014
Kerry	Tír Abhainn Thoir 091d	Precautionary - No Exceedance	BN	110	Full	13/02/2014	18/02/2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Kerry	Valentia	Precautionary - No Exceedance	BN	200	Full	13/02/2014	18/02/2014
Leitrim	Drumcong	Turbidity (at WTW)	BN	19	Part	25/07/2014	16/02/2015
Leitrim	Kinlough/Tullaghan	Precautionary - No Exceedance	BN	891	Full	05/07/2014	11/07/2014
Leitrim	NLRWSS - Dromahair	Coliform Bacteria	BN	100	Part	26/09/2014	14/10/2014
Leitrim	Rossinver	<i>Enterococci</i>	BN	207	Part	02/05/2014	16/05/2014
Limerick	Abbeyfeale	Precautionary - No Exceedance	BN	3,029	Full	12/02/2014	13/02/2014
Limerick	Adare	Precautionary - No Exceedance	BN	1,909	Full	13/02/2014	14/02/2014
Limerick	Anglesboro	Precautionary - No Exceedance	BN	40	Full	13/02/2014	14/02/2014
Limerick	Ardpatrick Kilfinnane	Precautionary - No Exceedance	BN	1,614	Full	13/02/2014	14/02/2014
Limerick	Athlacca	Precautionary - No Exceedance	BN	100	Full	13/02/2014	14/02/2014
Limerick	Ballinatona	Precautionary - No Exceedance	BN	39	Full	13/02/2014	15/02/2014
Limerick	Ballinagarry	Precautionary - No Exceedance	BN	562	Full	13/02/2014	14/02/2014
Limerick	Ballylanders	Precautionary - No Exceedance	BN	540	Full	13/02/2014	14/02/2014
Limerick	Bruff	Precautionary - No Exceedance	BN	1,419	Full	12/02/2014	13/02/2014
Limerick	Bruree	Precautionary - No Exceedance	BN	660	Full	12/02/2014	14/02/2014
Limerick	Caherconlish	Precautionary - No Exceedance	BN	1,601	Full	13/02/2014	14/02/2014
Limerick	Cappamore Foileen	Precautionary - No Exceedance	BN	1,821	Full	13/02/2014	14/02/2014
Limerick	Carrigkerry	Precautionary - No Exceedance	BN	184	Full	13/02/2014	14/02/2014
Limerick	Castletown/Ballyagran	Precautionary - No Exceedance	BN	242	Full	13/02/2014	14/02/2014
Limerick	Cromwell Hill	Precautionary - No Exceedance	BN	20	Full	13/02/2014	15/02/2014
Limerick	Croom	Precautionary - No Exceedance	BN	1,500	Full	13/02/2014	14/02/2014
Limerick	Doon	Precautionary - No Exceedance	BN	1,301	Full	13/02/2014	14/02/2014
Limerick	Emly Ballincaroona	Precautionary - No Exceedance	BN	62	Full	13/02/2014	15/02/2014
Limerick	Fedamore	Precautionary - No Exceedance	BN	325	Full	13/02/2014	19/02/2014
Limerick	Foynes/Shannon Estuary	Precautionary - No Exceedance	BN	1,481	Full	12/02/2014	13/02/2014
Limerick	Galbally	Precautionary - No Exceedance	BN	364	Full	13/02/2014	14/02/2014
Limerick	Glenosheen	Precautionary - No Exceedance	BN	200	Full	13/02/2014	14/02/2014
Limerick	Glin	Precautionary - No Exceedance	BN	1,044	Full	12/02/2014	13/02/2014
Limerick	Herbertstown	Precautionary - No Exceedance	BN	488	Full	12/02/2014	14/02/2014
Limerick	Hospital	Precautionary - No Exceedance	BN	1,630	Full	12/02/2014	14/02/2014
Limerick	Jamestown/Effin	Precautionary - No Exceedance	BN	397	Full	12/02/2014	14/02/2014
Limerick	Kilbeheny	Precautionary - No Exceedance	BN	160	Full	13/02/2014	15/02/2014
Limerick	Kilglass Pub	Precautionary - No Exceedance	BN	63	Full	13/02/2014	15/02/2014

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Limerick	Kilmallock	Precautionary - No Exceedance	BN	2,338	Full	12/02/2014	13/02/2014
Limerick	Kilteely	Precautionary - No Exceedance	BN	344	Full	13/02/2014	14/04/2014
Limerick	Knocklong	Precautionary - No Exceedance	BN	760	Full	12/02/2014	14/02/2014
Limerick	Limerick City Environs	Iron	WR	6	Part	28/08/2014	09/09/2014
Limerick	Limerick City Water Supply	Lead	WR	2,370	Part	22/07/2014	
Limerick	Limerick City Water Supply	Inadequate Disinfection	WR	500	Part	24/06/2014	25/06/2014
Limerick	Lissowen	Precautionary - No Exceedance	BN	39	Full	13/02/2014	15/02/2014
Limerick	Loughill	Precautionary - No Exceedance	BN	216	Full	12/02/2014	13/02/2014
Limerick	Martinstown	Precautionary - No Exceedance	BN	500	Full	13/02/2014	14/02/2014
Limerick	Mountpellier	Precautionary - No Exceedance	BN	368	Full	13/02/2014	14/02/2014
Limerick	Murroe	Precautionary - No Exceedance	BN	2,175	Full	12/02/2014	13/02/2014
Limerick	Newcastle West	Precautionary - No Exceedance	BN	7,469	Full	12/02/2014	13/02/2014
Limerick	Oola	Precautionary - No Exceedance	BN	1,152	Full	13/02/2014	15/02/2014
Limerick	Pallasgreen	Precautionary - No Exceedance	BN	1,850	Full	12/02/2014	13/02/2014
Limerick	Rockhill	Precautionary - No Exceedance	BN	275	Full	12/02/2014	14/02/2014
Limerick	Scart Highmount	Precautionary - No Exceedance	BN	39	Full	13/02/2014	15/02/2014
Limerick	South West Regional	Precautionary - No Exceedance	BN	2,984	Full	12/02/2014	13/02/2014
Longford	Newtowncashel	<i>Cryptosporidium</i>	BN	516	Full	04/09/2014	13/05/2015
Mayo	Treannagleeragh	<i>E. coli</i>	BN	80	Full	06/09/2013	10/12/2014
Meath	Baltrasna	<i>E. coli</i>	BN	9	Full	22/12/2014	
Offaly	Tullamore	Lead	WR	15	Part	19/11/2014	
Roscommon	Boyle	<i>Cryptosporidium</i>	BN	4,300	Full	13/05/2013	01/05/2015
Roscommon	Boyle/Ardcarne	<i>Cryptosporidium</i>	BN	1,700	Full	13/05/2013	01/05/2015
Roscommon	Castlerea Regional	Precautionary - No Exceedance	BN	3,443	Full	04/07/2012	30/06/2015
Roscommon	Castlerea Urban	<i>Cryptosporidium</i>	BN	1,800	Full	01/02/2014	30/06/2015
Roscommon	North East Regional	<i>Cryptosporidium</i>	BN	3,908	Full	27/03/2014	
Roscommon	SRRWSS - Killeglan	<i>Cryptosporidium</i>	BN	6,000	Part	24/10/2013	30/06/2015
Sligo	Killaraght	<i>Cryptosporidium</i>	BN	128	Part	14/05/2013	01/05/2015
Tipperary	Ahenny	Inadequate Disinfection	BN	100	Full	12/09/2013	30/06/2014
Tipperary	Ballinvir	Inadequate Disinfection	BN	100	Full	12/09/2013	30/06/2014
Tipperary	Burncourt Regional	<i>E. coli</i>	BN	178	Part	01/09/2009	
Tipperary	Burncourt Regional	Precautionary - No Exceedance	BN	2,038	Full	13/02/2014	15/02/2014
Tipperary	Cloran Regional	<i>E. coli</i>	BN	9	Part	22/10/2008	

Area/County	Scheme Name	Reason	Boil Notice (BN) / Water Restriction (WR)	Population Affected	Affecting Full Or Part Of Supply	Date Notice Issued	Date Notice Lifted
Tipperary	Gortnapisha Regional	<i>E. coli</i>	BN	9	Part	22/10/2008	
Tipperary	Graigie	<i>E. coli</i>	BN	1,192	Full	21/05/2014	23/06/2014
Tipperary	Graigie	pH	WR	13	Part	24/10/2014	31/10/2014
Tipperary	Templetney Borehole	Inadequate Disinfection	BN	20	Part	03/05/2012	
Tipperary	Tipperary UDC	<i>E. coli</i>	BN	4	Part	15/06/2012	08/07/2015
Waterford	Ballydermoddy	Nitrate	WR	2	Full	12/12/2013	
Waterford	East Waterford	Lead	WR	5	Part	07/11/2014	
Waterford	Glenawillin	Nitrate	WR	60	Full	24/05/2010	11/06/2014
Waterford	Nire	Precautionary - No Exceedance	BN	16	Part	13/08/2014	
Wexford	Enniscorthy	Coliform Bacteria	BN	20	Part	16/10/2013	27/01/2014
Wexford	Oldcourt	Coliform Bacteria	BN	21	Full	18/09/2014	23/01/2015
Wexford	Tellarought	Coliform Bacteria	BN	22	Full	19/03/2014	19/09/2014
Wexford	Wilton	Coliform Bacteria	BN	42	Full	20/05/2014	11/08/2014
Wicklow	Ballinapark Public Supply	Coliform Bacteria	BN	9	Full	19/02/2014	11/03/2014
Wicklow	Johnstown South (Arklow)	Coliform Bacteria	BN	6	Full	21/08/2013	25/02/2014
Wicklow	Knockananna Public Supply	<i>E. coli</i>	BN	255	Full	20/03/2014	28/03/2014
Wicklow	Monument Lane Public Supply	Coliform Bacteria	BN	30	Full	20/08/2013	03/02/2014
Wicklow	Wicklow Regional Supply	<i>E. coli</i>	BN	150	Part	10/10/2014	19/12/2014

This is a list of 214 boil notices and water restrictions that were /are the responsibility of either Irish Water or both Irish Water and the property owner to resolve. Additional notices were in place in certain areas during 2014 which were the responsibility of the property owner only. 158 precautionary boil notices were in place due to Storm Darwin. See section 2.2 for general information on boil notices and water restrictions.

Appendix 6: Details of Remedial Action List Supplies for each Area/County (as of December 2014)

	No. of Supplies on RAL		Progress on Completion of Remedial Works				
	Original RAL	RAL at the end of 2014	Works Completed	To be completed in 2015	To be completed in 2016	To be completed in or after 2017	No Timeframe for Completion
Kerry	41	30	7	2	6	2	13
Wicklow	22	13	1	3	0	7	2
Roscommon	10	11	0	7	2	1	1
Galway	34	10	4	2	1	2	1
Donegal	33	10	0	1	0	9	0
Tipperary	20	8	0	2	4	0	2
Waterford	18	7	2	1	0	1	3
Meath	8	4	0	0	1	2	1
Sligo	8	4	0	2	1	1	0
Mayo	15	4	1	2	0	1	0
Cork	38	3	1	0	0	0	2
Dublin City	1	3	0	2	0	0	1
Dun Laoghaire Rathdown	0	3	0	3	0	0	0
Kilkenny	7	2	0	0	0	0	2
Monaghan	12	2	2	0	0	0	0
Cavan	10	1	0	0	0	1	0
Cork City	1	1	0	0	0	0	1
Longford	5	1	0	1	0	0	0
Louth	3	1	0	0	1	0	0
Laois	8	1	0	0	0	0	1
Leitrim	2	1	0	0	0	0	1
Wexford	4	1	1	0	0	0	0
Carlow	4	0	n/a	n/a	n/a	n/a	n/a
Clare	9	0	n/a	n/a	n/a	n/a	n/a
Fingal	0	0	n/a	n/a	n/a	n/a	n/a
Galway City	1	0	n/a	n/a	n/a	n/a	n/a
Kildare	0	0	n/a	n/a	n/a	n/a	n/a
Limerick City	1	0	n/a	n/a	n/a	n/a	n/a
Limerick	12	0	n/a	n/a	n/a	n/a	n/a
Offaly	8	0	n/a	n/a	n/a	n/a	n/a
South Dublin	0	0	n/a	n/a	n/a	n/a	n/a
Waterford City	1	0	n/a	n/a	n/a	n/a	n/a
Westmeath	3	0	n/a	n/a	n/a	n/a	n/a

Appendix 7: Quality and enforcement information for public supplies by county/area for 2014

	Public Supplies ¹		Parameter Compliance (%) ²		Boil Notices ²		Water Restrictions ²		RAL ^{3,4}	Directions ³	Audits ^{3,5}
County/ Area ⁶	Number	Population	Microbiological	Chemical	Number	Population affected	Number	Population Affected	Number (Supplies, end 2014)	Number Issued	Number
Carlow	16	47,804	100	100							3
Cavan	18	25,025	100	99.6					1		2
Clare	19	79,388	100	99.8	1	200	3	3668		1	4
Cork	179	336,395	99.9	99.7	81	111442	3	315	3		3
Cork City	1	125,230	100	99.8					1		
Dun Laoghaire Rathdown	8	207,350	99.7	99.9	1	3			3		1
Donegal	32	135,794	100	99.2					10	9	3
Dublin City	6	524,000	99.9	99					3		
Fingal	2	271,999	100	100							
Galway	38	106,824	99.7	99.4	1	1020			10	5	6
Galway City	1	75,415	100	100							
Kerry	72	113,445	99.9	98.5	40	15199	1	72	30		5
Kildare	12	185,658	100	99.6							
Kilkenny	22	60,706	100	99.3					2	1	4
Laois	28	58,609	100	99.2					1	1	1
Leitrim	8	16,558	99.4	100	4	1217			1	1	4
Limerick	44	121,167	100	99.8	42	43304	3	3860			
Longford	6	14,852	96	100	1	516			1	1	2
Louth	15	99,575	100	99.8					1		
Mayo	24	77,956	100	100	1	80			4		4
Meath	64	147,475	99.8	99.4	1	9			4		
Monaghan	10	31,712	100	99.6					2		2
Offaly	23	44,267	95.4	100			1	15			
Roscommon	21	48,807	100	99.1	6	21151			11	6	5
Sligo	9	65,034	99.7	99.4	1 ⁷	128			4	2	1
South Dublin	4	257,600	100	99.8							
Tipperary	55	129,303	99.9	99.4	9	3650	1	13	8		1
Waterford	113	82,282	100	99.2	1	16	3	67	7		
Westmeath	15	62,325	100	99.8							
Wexford	43	104,379	99.4	99.9	4	105			1	2	6
Wicklow	65	113,749	97.7	99.5	5	450			13		5
Totals:	973	3,770,683	N/A	N/A	199	198,490	15	8,010	121	29	62

¹ Full list of public supplies available at <http://www.epa.ie/pubs/advice/drinkingwater/publicdrinkingwatersupplies/>; ² boil notice and water restriction numbers included above refer to notices that were the responsibility of either Irish Water or both Irish Water and the property owner to resolve. Further notices were in place in certain areas during 2014 which were the responsibility of the property owner only. 158 boil notices relate to Storm Darwin and were of short duration; Further information in Section 2.2; ³ Further information in Section 2.5.2; ⁴ Current RAL list is available at <http://www.epa.ie/pubs/reports/water/drinking/>; ⁵ Audit reports available at <http://www.epa.ie/pubs/advice/drinkingwater/audits/>; ⁶ Drinking Water Monitoring results and water supply details for each year since 2000 for each county is available at <http://erc.epa.ie/safer/resourcelisting.jsp?old=10206&username=EPA%20Drinking%20Water.>; ⁷ Served by a supply in County Roscommon

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Gníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaoil a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaoil a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maith a chomhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.

Eolas: Soláthraimid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhíríte agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.

Tacaíocht: Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaoil atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaoil inbhuanaithe.

Ár bhFreagrachtaí

Ceadúnú

- Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaoil:
- saoráidí dramhaíola (m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola);
- gníomhaíochtaí tionsclaíocha ar scála mór (m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta);
- an diantalmhaíocht (m.sh. muca, éanlaith);
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (OGM);
- foinsí radaíochta ianúcháin (m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha);
- áiseanna móra stórála peitрил;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a idíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaoil.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaoil

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil (m.sh. tuairisciú tréimhsiúil ar staid Chomhshaoil na hÉireann agus Tuarascálacha ar Tháscairí).

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaoil in Éirinn (m.sh. mórpheananna forbartha).

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as tairmí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaoil ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaoil (m.sh. Timpeall an Tí, léarscáileanna radóin).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig Aeráide, Ceadúnaithe agus Úsáide Acmhainní
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Measúnú Comhshaoil
- An Oifig um Cosaint Raideolaíoch
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair inné agus le comhairle a chur ar an mBord.

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