Performance Tables and Data

These tables provide a summary of the monitoring that Scottish Water has undertaken for the reporting year 2015 and reported to the Drinking Water Quality Regulator for Scotland (DWQR) and Scottish Ministers. Tables are also provided which show comparative performance over a number of years. These tables are published as part of DWQR's Annual Report on the Quality of Public Drinking Water Supplies in Scotland 2015 which is available on our website at www.dwqr.scot. The number of assets for which monitoring was required are shown in Table 1.

Published for the Drinking Water Quality Regulator for Scotland, August 2016

Table 1 - Summary Asset Information

Summary Information	
Length of Water Mains (km)	~47,000 km
Number of Water Treatment Works	240
Number of Service reservoirs	987
Number of Water Supply Zones	290
Population served	4,999,142
Volume of water supplied	1.8M m^3 per day

Table 2 – Quality of Water leaving water treatment works

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of works failing
E. coli	0 number/100ml	24,865	0	0.00	0
Coliform bacteria	0 number/100ml	24,866	16	0.06	14
*Cryptosporidium**	n/a	9,483	84	0.89	26
Colony counts after 3 days at 22°C	No abnormal change	24,024	-	-	-
Colony counts after 48 hrs at 37°C	No abnormal change	24,012	-	-	-
Residual disinfectant - free	n/a	25,784	-	-	-
Residual disinfectant - total	n/a	25,820	-	-	-
Turbidity	1 NTU	7,150	10	0.14	9
Nitrite	0.1 mg NO_2/l	2,836	0	0.00	0

* Data presented for *Cryptosporidium* relates to the number of detections of oocysts – these are not failing tests

Table 3 – Microbiological quality of water leaving treatment works – comparative performance

Coliform Bacteria	2015	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Number of tests	24,866	*26,814*	*26,888*	*27,305*	*28,792*	*29,097*	*30,997*	*31,488*	*32,534*
Number containing coliforms	16	*40*	*17*	*33*	*49*	*44*	*30*	*76*	*33*
Percentage containing coliforms	0.06	*0.15*	*0.06*	*0.12*	*0.17*	*0.15*	*0.10*	*0.24*	*0.10*
E.coli									
Number of tests	24,865	*26,814*	*26,888*	*27,304*	*28,794*	*29,097*	*30,997*	*31,487*	*32,534*
Number containing faecal coliforms	0	*2*	*1*	*3*	*5*	*8*	*6*	*10*	*10*
Percentage containing faecal coliforms	0	*0.01*	*0.00*	*0.01*	*0.02*	*0.03*	*0.02*	*0.03*	*0.03*

Table 4 – Chemical quality of water leaving treatment works – comparative performance

Nitrite	2015	2014	2013	2012	2011	2010	2009	2008	2007
Number of tests	2,836	2,856	2,824	2,790	2,910	2,859	2,993	3,028	3,182
Number of tests exceeding standard	0	0	0	0	1	3	4	2	3
Percentage of tests exceeding standard	0.00	0.00	0.00	0.00	0.03	0.10	0.13	0.07	0.09
Turbidity									
Number of tests	7,150	7,347	7,298	7,331	7,745	7,855	8,123	8,250	8,514
Number of tests exceeding standard	10	13	12	10	24	28	26	33	71
Percentage of tests exceeding standard	0.14	0.18	0.16	0.14	0.31	0.36	0.32	0.4	0.83

Table 5 – *Cryptosporidium* detections at treatment works – comparative performance

Cryptosporidium	2015	2014	2013	2012	2011	2010	2009	2008	2007
Number of tests	9,483	8,851	8,300	8,739	8,919	9,386	10,386	11,002	11,393
Number of samples containing *Cryptosporidium* oocysts	84	124	118	217	378	312	409	471	927
% of samples containing *Cryptosporidium* oocysts	0.89	1.40	1.42	2.48	4.24	3.32	3.94	4.28	8.14
Number of treatment works sampled for *Cryptosporidium*	238	241	252	267	264	270	281	292	300
Number of treatment works with one or more samples containing oocysts	26	51	43	77	91	88	93	87	138

Table 6 – Quality of water leaving service reservoirs

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of reservoirs failing
E. coli	0 number/100ml	49,573	5	0.01	5
Coliforms	0 number/100ml	49,575	63	0.13	55
Colony counts after 3 days at 22°C	No abnormal change	47,544	-	-	-
Colony counts after 48 hrs at 37°C	No abnormal change	47,521	-	-	-
Residual disinfectant - free	n/a	50,248	-	-	-
Residual disinfectant - total	n/a	50,253	-	-	-

Table 7 – Quality of water leaving service reservoirs – comparative performance

Coliform Bacteria	2015	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Number of tests	49,575	*51,533*	*51,523*	*52,226*	*51,952*	*49,877*	*53,001*	*55,104*	*56,277*
Number containing coliforms	63	*104*	*73*	*109*	*122*	*106*	*137*	*137*	*127*
% containing coliforms	0.13	*0.20*	*0.14*	*0.21*	*0.23*	*0.21*	*0.26*	*0.25*	*0.23*
E.coli									
Number of tests	49,573	*51,533*	*51,591*	*52,226*	*51,952*	*49,877*	*53,001*	*55,102*	*56,277*
No. containing faecal coliforms	5	*2*	*5*	*7*	*13*	*9*	*12*	*11*	*16*
% containing faecal coliforms	0.01	*0.00*	*0.01*	*0.01*	*0.03*	*0.02*	*0.02*	*0.02*	*0.03*

Table 8– Quality of water at consumer's taps

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
Aluminium	200 µg Al/l	5,069	3	0.06%	3
Ammonium	0.50 mg NH_4/l	5,102	0	0.00%	0
Antimony	5.0 µg Sb/l	1,499	0	0.00%	0
Arsenic	10 µg As/l	1,499	0	0.00%	0
Benzene	1.0 µg/l	1,542	0	0.00%	0
Benzo(a)pyrene	0.010 µg/l	1,503	1	0.07%	1
Boron	1.0 mg B/l	1,499	0	0.00%	0
Bromate	10 µg BrO_3/l	1,498	0	0.00%	0
Cadmium	5.0 µg Cd/l	1,499	0	0.00%	0
Chloride	250 mg Cl/l	1,497	0	0.00%	0
Chromium	50 µg Cr/l	1,499	0	0.00%	0
Clostridium perfringens	0 number/100ml	5,071	1	0.02%	1
Coliform bacteria	0 number/100ml	14,100	34	0.24%	29
Colony counts after 3 days at 22°C	No abnormal change	4,897	-	-	-
Colony counts after 48 hrs at 37°C	No abnormal change	4,896	-	-	-
Colour	20	5,104	0	0.00%	0
Conductivity	2500 µS/cm at 20°C	5,104	0	0.00%	0
Copper	2.0 mg Cu/l	1,499	1	0.07%	1
Cyanide	50 µg CN/l	1,499	0	0.00%	0
1,2-dichloroethane	3.0 µg/l	1,566	0	0.00%	0
E. coli	0 number/100ml	14,100	1	0.01%	1
Enterococci	0 number/100ml	1,499	0	0.00%	0
Fluoride	1.5 mg F/l	1,497	0	0.00%	0
Hydrogen ion (pH)	6.5 (min) 9.5 (max)	5,104	5	0.10%	5
Iron	200 µg Fe/l	5,069	28	0.55%	21
Indicative dose	0.10 mSv/year	1,499	15	1.00%	15
Lead	10 µg Pb/l	5,104	0	0.00%	0
Manganese	50 µg Mn/l	5,069	13	0.26%	11

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
Mercury	1.0 µg Hg/l	1,499	0	0.00%	0
Nickel	20 µg Ni/l	1,499	5	0.33%	5
Nitrate	50 mg NO_3/l	2,430	0	0.00%	0
Nitrate/nitrite formula	< 1	2,430	6	0.25%	4
Nitrite	0.5 mg NO_2/l	2,430	0	0.00%	0
Pesticide - Aldrin	0.03 µg/l	1,506	0	0	0
Pesticide - Diazinon	0.1 µg/l	1,031	0	0	0
Pesticide - Dieldrin	0.03 µg/l	1,518	0	0	0
Pesticide - Gamma-HCH (Lindane)	0.1 µg/l	760	0	0	0
Pesticide - Heptachlor	0.03 µg/l	1,506	0	0	0
Pesticide - Heptachlor epoxide	0.03 µg/l	1,518	0	0	0
Pesticide - Propetamphos	0.1 µg/l	1,031	0	0	0
Pesticide - Asulam	0.1 µg/l	315	0	0	0
Pesticide - Chlortoluron	0.1 µg/l	314	0	0	0
Pesticide - 2,4-D	0.1 µg/l	811	0	0	0
Pesticide - Dicamba	0.1 µg/l	811	0	0	0
Pesticide - Diuron	0.1 µg/l	318	0	0	0
Pesticide - Isoproturon	0.1 µg/l	338	0	0	0
Pesticide - Linuron	0.1 µg/l	318	0	0	0
Pesticide - MCPP(Mecoprop)	0.1 µg/l	811	0	0	0
Pesticide - MCPA	0.1 µg/l	811	1	0.12	1
Pesticide - MCPB	0.1 µg/l	811	0	0	0
Pesticide - 2,4,-DB	0.1 µg/l	811	0	0	0
Pesticide - Cypermethrin	0.1 µg/l	556	0	0	0
Pesticide - Permethrin	0.1 µg/l	573	0	0	0
Pesticide - Flumethrin	0.1 µg/l	558	0	0	0
Pesticide - Metazachlor	0.1 µg/l	160	0	0	0
Pesticide - Metsulfuron	0.1 µg/l	161	0	0	0
Pesticide - Metaldehyde	0.1 µg/l	340	0	0	0
Pesticide - Thifensulfuron-methyl	0.1 µg/l	161	0	0	0

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
Pesticide - Tribenuron-methyl	0.1 µg/l	161	0	0	0
Pesticide - Atrazine	0.1 µg/l	447	0	0	0
Pesticide - Simazine	0.1 µg/l	447	0	0	0
Pesticide - total	0.5 µg/l	2,509	0	0.00	0
Polyaromatic hydrocarbon (PAH)	0.10 µg/l	1,503	0	0.00%	0
Odour	No abnormal change	14,097	0	0.00%	0
Residual disinfectant - free	n/a	14,097	0	0.00%	0
Residual disinfectant - total	n/a	5,108	3	0.06%	3
Selenium	10 µSe/l	1,499	0	0.00%	0
Sodium	200 mg Na/l	1,499	0	0.00%	0
Sulphate	250 mg SO_4/l	1,499	0	0.00%	0
Taste	No abnormal change	5,105	4	0.08%	4
Tetrachloroethene and Trichloroethene - sum of the two	10 µg/l	1,553	0	0.00%	0
Tetrachloromethane	3 µg/l	1,560	0	0.00%	0
Total Organic Carbon	No abnormal change	1,519	0	0.00%	0
Trihalomethanes – Total	100 µg/l	1,577	2	0.13%	2
Tritium	100 Bq/l	288	0	0.00	0
Turbidity	4 NTU	5,104	0	0.00%	0

Table 9 – Water quality related consumer contacts received by Scottish Water

Contact Category	Number of Contacts				% Change on 2014	Contact rate per 10,000 population			
	2015	*2014*	*2013*	*2012*		2015	*2014*	*2013*	*2012*
Appearance									
Discoloured Water	6,160	*9,278*	*7,172*	*8,279*	-33.6	12.3	*18.3*	*14.4*	*16.6*
Aerated (Milky) Water	1,802	*1,558*	*1,587*	*2,536*	+15.7	3.6	*3.1*	*3.2*	*5.1*
Particles in Water	498	*515*	*523*	*1,190*	-3.3	1.0	*1.0*	*1.1*	*2.4*
Organisms in Water	59	*54*	*50*	*67*	+9.3	0.1	*0.1*	*0.1*	*0.1*
Taste and Odour									
Chlorine	774	*1,022*	*1,105*	*1,986*	-24.3	1.5	*2.0*	*2.2*	*4.0*
Metallic	441	*417*	*539*	*1,285*	+5.8	0.9	*0.8*	*1.1*	*2.6*
Solvent/Fuel Taste/Smell	368	*49*	*54*	*107*	651.0	0.7	*0.1*	*0.1*	*0.2*
Musty/Earthy	607	*616*	*558*	*1,035*	-1.5	1.2	*1.2*	*1.1*	*2.1*
TCP/Chemical Taste/Smell	336	*352*	*457*	*1,102*	-4.5	0.7	*0.7*	*0.9*	*2.2*
Other contact about Water Quality									
Illness due to Water	200	*151*	*167*	*451*	-32.5	0.4	*0.3*	*0.3*	*0.9*
Other Contact	0	*0*	*0*	*0*	-	0.0	*0.0*	*0.0*	*0.0*
Total Contacts about Water Quality	**11,245**	*14,012*	*12,212*	*18,038*	**-19.7**	**22.5**	*27.7*	*24.4*	*36.1*