

Performance Tables and Data

These tables provide a summary of the monitoring that Scottish Water has undertaken for the reporting year 2016 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 2016 which is available on our website at www.dwqr.scot. The number of assets for which monitoring was required are shown in Table 1.

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Table 1 – Summary Asset Information

Summary Information	
Length of Water Mains (km)	~47,000 km
Number of Water Treatment Works	241
Number of Service reservoirs	980
Number of Water Supply Zones	289
Population served	4,997,315
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
Coliform bacteria	0 number/100ml	26,021	33	0.13	30
Colony counts after 3 days at 22°C	No abnormal change	26,005	0	0.00	0
Colony counts after 48 hrs at 37°C	No abnormal change	26,018	0	0.00	0
<i>Cryptosporidium</i> *	n/a	9,737	87	0.89	28
<i>E. coli</i>	0 number/100ml	26,021	2	0.01	2
Nitrite	0.1 mg NO ₂ /l	2,801	3	0.11	1
Residual disinfectant - free	n/a	26,041	0	0.00	0
Residual disinfectant - total	n/a	26,039	0	0.00	0
Turbidity	1 NTU	7,120	10	0.14	9

* 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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Coliform Bacteria										
Number of tests	26,021	24,866	26,814	26,888	27,305	28,792	29,097	30,997	31,488	32,534
Number containing coliforms	33	16	40	17	33	49	44	30	76	33
Percentage containing coliforms	0.13	0.06	0.15	0.06	0.12	0.17	0.15	0.10	0.24	0.10
<i>E. coli</i>										
Number of tests	26,021	24,865	26,814	26,888	27,304	28,794	29,097	30,997	31,487	32,534
Number containing faecal coliforms	2	0	2	1	3	5	8	6	10	10
Percentage containing faecal coliforms	0.01	0.00	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	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Number of tests	2,801	2,836	2,856	2,824	2,790	2,910	2,859	2,993	3,028	3,182
Number of tests exceeding standard	3	0	0	0	0	1	3	4	2	3
Percentage of tests exceeding standard	0.11	0.00	0.00	0.00	0.00	0.03	0.10	0.13	0.07	0.09
Turbidity										
Number of tests	7,127	7,150	7,347	7,298	7,331	7,745	7,855	8,123	8,250	8,514
Number of tests exceeding standard	10	10	13	12	10	24	28	26	33	71
Percentage of tests exceeding standard	0.14	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

<i>Cryptosporidium</i>	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Number of tests	9,737	9,483	8,851	8,300	8,739	8,919	9,386	10,386	11,002	11,393
Number of samples containing <i>Cryptosporidium</i> oocysts	87	84	124	118	217	378	312	409	471	927
% of samples containing <i>Cryptosporidium</i> oocysts	0.89	0.89	1.40	1.42	2.48	4.24	3.32	3.94	4.28	8.14
Number of treatment works sampled for <i>Cryptosporidium</i>	238	238	241	252	267	264	270	281	292	300
Number of treatment works with one or more samples containing oocysts	28	26	51	43	77	91	88	93	87	138
% of treatment works with one or more samples containing oocysts	11.76	10.92	21.16	17.06	28.84	34.47	32.59	33.10	29.79	46.00

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
Coliform Bacteria	0 number/100ml	50,323	53	0.11	47
<i>E. coli</i>	0 number/100ml	50,323	4	0.01	3
Colony counts after 3 days at 22°C	No abnormal change	50,237	0	0.00	0
Colony counts after 48 hrs at 37°C	No abnormal change	50,290	0	0.00	0
Residual disinfectant - free	n/a	50,302	0	0.00	0
Residual disinfectant - total	n/a	50,302	0	0.00	0

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

Coliform Bacteria	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Number of tests	50,323	49,575	51,533	51,523	52,226	51,952	49,877	53,001	55,104	55,277
Number containing coliforms	53	63	104	73	109	122	106	137	137	127
% containing coliforms	0.11	0.13	0.20	0.14	0.21	0.23	0.21	0.26	0.25	0.23
53.001										
Number of tests	50,323	49,573	51,533	51,591	52,226	51,952	49,877	53,001	55,102	56,277
Number containing faecal coliforms	4	5	2	5	7	13	9	12	11	16
% containing faecal coliforms	0.01	0.01	0.00	0.01	0.01	0.03	0.02	0.02	0.02	0.03

Table 8 – Quality of water at consumers’ taps

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
1,2-Dichloroethane	3.0 µg/l	1,527	0	0.00	0
Aluminium	200 µg Al/l	5,027	1	0.02	1
Ammonium	0.50 mg NH ₄ /l	5,066	1	0.02	1
Antimony	5.0 µg Sb/l	1,501	0	0.00	0
Arsenic	10 µg As/l	1,501	0	0.00	0
Benzene	1.0 µg/l	1,530	0	0.00	0
Benzo 3,4 pyrene	0.010 µg/l	1,534	1	0.07	1
Boron	1.0 mg B/l	1,502	0	0.00	0
Bromate	10 µg BrO ₃ /l	1,497	0	0.00	0
Cadmium	5.0 µg Cd/l	1,501	0	0.00	0
Chloride	250 mg Cl/l	1,501	0	0.00	0
Chromium	50 µg Cr/l	1,501	0	0.00	0
<i>Clostridium perfringens</i>	0 number/100ml	5,033	6	0.12	6
Coliform bacteria	0 number/100ml	14,058	37	0.26	28
Colony counts after 3 days at 22°C	No abnormal change	5,070	0	0.00	0
Colony counts after 48 hrs at 37°C	No abnormal change	5,070	0	0.00	0
Colour	20 mg/l Pt/Co	5,067	0	0.00	0
Conductivity	2500 µS/cm at 20°C	5,057	0	0.00	0
Copper	2.0 mg Cu/l	1,501	0	0.00	0
Cyanide	50 µg CN/l	1,498	0	0.00	0
<i>E. coli</i>	0 number/100ml	14,058	1	0.01	1
Enterococci	0 number/100ml	1,505	1	0.07	1
Fluoride	1.5 mg F/l	1,497	0	0.00	0
Hydrogen ion (pH)	6.5 (min) 9.5 (max)	5,067	1	0.02	1
Iron	200 µg Fe/l	5,027	23	0.46	18
Lead (10)	10 µg Pb/l	1,501	13	0.87	12
Manganese	50 µg Mn/l	5,027	10	0.20	7
Mercury	1.0 µg Hg/l	1,500	0	0.00	0

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
Nickel	20 µg Ni/l	1,501	6	0.40	6
Nitrate	50 mg NO ₃ /l	2,417	0	0.00	0
Nitrite	0.5 mg NO ₂ /l	2,418	7	0.29	6
Nitrate/nitrite formula	< 1 mg/l	2,417	0	0.00	0
Odour	No abnormal change	5,069	6	0.12	6
PAH – sum of four substances	0.1 µg/l	1,507	1	0.07	1
Pesticide - 2,4-D	0.03 µg/l	837	0	0.00	0
Pesticide - 2,4,-DB	0.1 µg/l	830	0	0.00	0
Pesticide - Aldrin	0.1 µg/l	1,505	0	0.00	0
Pesticide - Asulam	0.1 µg/l	315	0	0.00	0
Pesticide - Atrazine	0.1 µg/l	446	0	0.00	0
Pesticide - Chlortoluron	0.1 µg/l	316	0	0.00	0
Pesticide - Cypermethrin	0.1 µg/l	554	0	0.00	0
Pesticide - Diazinon	0.1 µg/l	988	0	0.00	0
Pesticide - Dicamba	0.03 µg/l	826	0	0.00	0
Pesticide - Dieldrin	0.1 µg/l	1,505	0	0.00	0
Pesticide - Diuron	0.1 µg/l	317	0	0.00	0
Pesticide - Flumethrin	0.1 µg/l	554	0	0.00	0
Pesticide - Gamma-HCH (Lindane)	0.03 µg/l	759	0	0.00	0
Pesticide - Heptachlor	0.03 µg/l	1,505	0	0.00	0
Pesticide - Heptachlor epoxide	0.1 µg/l	1,505	0	0.00	0
Pesticide - Isoproturon	0.1 µg/l	340	0	0.00	0
Pesticide - Linuron	0.1 µg/l	320	0	0.00	0
Pesticide - MCPA	0.1 µg/l	829	0	0.00	0
Pesticide - MCPB	0.1 µg/l	837	0	0.00	0
Pesticide - MCPP(Mecoprop)	0.1 µg/l	829	0	0.00	0
Pesticide - Metaldehyde	0.1 µg/l	340	0	0.00	0
Pesticide - Metazachlor	0.1 µg/l	160	0	0.00	0
Pesticide - Metsulfuron	0.1 µg/l	169	0	0.00	0
Pesticide - Permethrin	0.1 µg/l	576	0	0.00	0

Parameter	Prescribed Concentration or Value PCV	No. of tests	No. of tests failing	% of tests failing	No. of zones failing
Pesticide - Propetamphos	0.1 µg/l	988	0	0.00	0
Pesticide - Simazine	0.1 µg/l	446	0	0.00	0
Pesticide - Thifensulfuron-methyl	0.1 µg/l	169	0	0.00	0
Pesticide - Tribenuron-methyl	0.1 µg/l	160	0	0.00	0
Pesticide - total	0.5 µg/l	2663	0	0.00	0
Residual disinfectant - free	n/a	14,062	0	0.00	0
Residual disinfectant - total	n/a	14,060	0	0.00	0
Radon	100 Bq/l	150	2	1.33	2
Selenium	10 µSe/l	1,501	0	0.00	0
Sodium	200 mg Na/l	1,502	0	0.00	0
Sulphate	250 mg SO ₄ /l	1,502	0	0.00	0
Taste	No abnormal change	5,066	5	0.10	5
Tetrachloroethene and Trichloroethene - sum of the two	10 µg/l	1,517	0	0.00	0
Tetrachloromethane	3 µg/l	1,527	0	0.00	0
Total Organic Carbon	No abnormal change	1,493	0	0.00	0
Trihalomethanes – Total	100 µg/l	1,506	8	0.53	8
Tritium	100 Bq/l	76	0	0.00	0
Turbidity	4 NTU	5,073	1	0.02	1

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

Contact Category	Number of Contacts				% Change on 2015	Contact rate per 10,000 population			
	2016	2015	2014	2013		2016	2015	2014	2013
Appearance									
Discoloured Water	6,056	6,160	9,278	7,172	-1.6	12.1	12.3	18.3	14.4
Aerated (Milky) Water	1,173	1,802	1,558	1,587	-33.3	2.4	3.6	3.1	3.2
Particles in Water	610	498	515	523	20.0	1.2	1.0	1.0	1.1
Organisms in Water	68	59	54	50	0.0	0.1	0.1	0.1	0.1
Taste and Odour									
Chlorine	996	774	1,022	1,105	33.3	2.0	1.5	2.0	2.2
Metallic	484	441	417	539	11.1	1.0	0.9	0.8	1.1
Solvent/Fuel Taste/Smell	46	368	49	54	-85.7	0.1	0.7	0.1	0.1
Musty/Earthy	682	607	616	558	16.7	1.4	1.2	1.2	1.1
TCP/Chemical Taste/Smell	331	336	352	457	0.0	0.7	0.7	0.7	0.9
Other contact about Water Quality									
Illness due to Water	213	200	151	167	0.0	0.4	0.4	0.3	0.3
Other Contact	0	0	0	0	-	0.0	0.0	0.0	0.0
Total Contacts about Water Quality	10,659	11,245	14,012	12,212	-5.3	21.3	22.5	27.7	24.4