

7 SUPPORTING INFORMATION

7.1 Public Supplies Water Performance Tables

Table 12 Summary of Scottish Water Assets

Summary Asset Information	
Loch and Reservoir Sources	177
River Sources	162
Spring and Borehole Sources	86
Length of Water Mains (km)	48,549
Water Treatment Works	228
Storage Points	960
Water Supply Zones	278
Water Supplied Per Day	1.53 billion litre

Table 13 Quality of Water Leaving WTW 2021

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	24,849	16	0.064%	14
<i>Cryptosporidium</i>	N/A - no regulatory standard	5,810	25	0.430%	8
<i>E. coli</i>	0 number/100ml	24,849	2	0.008%	2
Nitrite	0.1mg NO ₂ /l	3,194	0	0.00%	
Radon	100Bq/l	35	0	0.00%	0
Residual disinfectant - free	N/A - no regulatory standard	25381	0	0.00%	
Residual disinfectant - total	N/A - no regulatory standard	25377	0	0.00%	
Turbidity	1NTU	6,854	6	0.088%	4

* *Cryptosporidium* has no regulatory standard. There were 25 detections of *Cryptosporidium* oocysts in the final water at WTW, of which 10 were reported as water quality failures under the terms set out by DWQR in Information Notice 2016/1.

Table 14 Microbiological Quality Leaving WTW

Coliform Bacteria	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	24,849	25,854	25,619	25,538	25,801	26,021	24,866	26,814	26,888	27,305	28,792
Number containing coliforms	16	18	32	24	22	33	16	40	17	33	49
Percentage containing coliforms	0.06%	0.07%	0.12%	0.09%	0.09%	0.13%	0.06%	0.15%	0.06%	0.12%	0.17%
<i>E.coli</i>											
Number of tests	24,849	25,854	25,619	25,538	25,801	26,021	24,865	26,814	26,888	27,304	28,794
Number containing faecal coliforms	2	1	3	0	1	2	0	2	1	3	5
Percentage containing faecal coliforms	0.008%	0.004%	0.012%	0.000%	0.004%	0.008%	0.000%	0.007%	0.004%	0.011%	0.017%

Table 15 Chemical Quality leaving WTW

Nitrite	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	3,194	3,282	3,250	2,980	2,853	2,801	2,836	2,856	2,824	2,790	2,910
Number of tests exceeding standard	0	0	0	0	0	3	0	0	0	0	1
Percentage of tests exceeding standard	0	0	0	0	0	0.11	0	0	0	0	0.03
Turbidity		2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	6,854	7,139	7,026	6,859	7,060	7,127	7,150	7,347	7,298	7,331	7,745
Number of tests exceeding standard	6	5	8	9	10	10	10	13	12	10	24
Percentage of tests exceeding standard	0.09	0.07	0.11	0.13	0.14	0.14	0.14	0.18	0.16	0.14	0.31

Table 16 *Cryptosporidium* oocysts in water leaving WTW

<i>Cryptosporidium</i>	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	5,810	5,213	9,101	8,764	9,087	9,737	9,483	8,851	8,300	8,739	8,919
Number of samples containing <i>Cryptosporidium</i> * oocysts	25	46	38	35	44	87	84	124	118	217	378
% of samples containing <i>Cryptosporidium</i> oocysts	0.43%	0.88%	0.42%	0.40%	0.48%	0.89%	0.89%	1.40%	1.42%	2.48%	4.24%
Number of samples containing <i>Cryptosporidium</i> oocysts treated with UV	15	38	30								
% of failed samples containing <i>Cryptosporidium</i> oocysts treated with UV	60	83	79								
No. of WTW sampled for <i>Cryptosporidium</i>	224	229	230	238	234	238	238	241	252	267	264
No. of WTW with one or more samples containing oocysts	8	5	11	23	20	28	26	51	43	77	91
% of WTW with one or more samples containing oocysts	3.57%	2.18%	4.78%	9.66%	8.55%	11.76%	10.92%	21.16%	17.06%	28.84%	34.47%

*Cryptosporidium has no regulatory standard but water must not contain any parasite at a value that would pose a risk to human health. There were 25 detections of *Cryptosporidium* oocysts in the final water at WTW of which 10 were reported as water quality failures under the terms set out by DWQR in Information Notice 2016/1

Table 17 Quality of water leaving SR

Parameter	Prescribed Concentration or Value (PCV)	No. of tests	No. of tests failing	% of tests failing	No. of SR failing
Coliform bacteria	0 number/100ml	47,324	44	0.09%	41
<i>E. coli</i>	0 number/100ml	47,324	2	0.004%	2
Residual disinfectant - free	N/A - no regulatory standard	48,580	0	0.00%	0
Residual disinfectant - total	N/A - no regulatory standard	48,577	0	0.00%	0

Table 18 Microbiological quality leaving SR

Coliform Bacteria	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	47,324	49,476	49,625	49,093	50,048	50,323	49,575	51,533	51,523	52,226	51,952
Number containing coliforms	44	54	72	66	68	53	63	104	73	109	122
% containing coliforms	0.09%	0.11%	0.15%	0.13%	0.14%	0.11%	0.13%	0.20%	0.14%	0.21%	0.23%
<i>E.coli</i>	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of tests	47,324	49,476	49,625	49,094	50,048	50,323	49,573	51,533	51,591	52,226	51,952
No. containing faecal coliforms	2	6	6	2	5	4	5	2	5	7	13
% containing faecal coliforms	0.004%	0.012%	0.012%	0.004%	0.010%	0.008%	0.010%	0.004%	0.010%	0.013%	0.025%

Table 19 Parameters of Water Quality at Consumers' Taps

Parameter	Prescribed Concentration or Value (PCV)	Total No. of Tests	No. Failed Tests	No. Zones with Failures	% Compliance in 2021	% Compliance in 2020	% Compliance in 2019
Key Parameters							
Bacteria							
Coliform Bacteria	0 number/100ml	14,764	25	21	99.83	99.87	99.75
<i>E. coli</i>	0 number/100ml	14,764	2	2	99.99	99.99	99.99
<i>Enterococci</i>	0 number/100ml	1,443	2	2	99.86	99.93	99.93
<i>Clostridium perfringens</i>	0 number/100ml	5,224	3	3	99.94	100.00	99.94
Key Metals							
Aluminium	200µg Al/l	5,222	2	2	99.96	99.96	100.00
Iron	200µg Fe/l	5,222	22	11	99.58	99.60	99.29
Lead (10)	10µg Pb/l	1,463	4	4	99.73	99.74	99.53
Manganese	50µg Mn/l	5,222	33	18	99.37	99.71	99.81
Nickel	20µg Ni/l	1,459	11	10	99.25	99.09	99.93
Other Key Parameters							
Colour	20mg/l Pt/Co	5,256	0	0	0	100.00	100.00
Hydrogen ion (pH)	6.5-9.5 pH	5,256	2	2	99.96	99.98	99.98
Nitrite	0.5mg NO ₂ /l	2,834	1	1	99.96	100.00	99.98
Odour	No abnormal change	5,256	0	0	100.00	100.00	99.90
Taste	No abnormal change	5,253	0	0	100.00	100.00	99.96
Total Trihalomethanes	100µg/l	1,467	2	1	99.86	99.93	99.80
Turbidity	4 NTU	5,256	0	0	100.00	99.98	99.98
Total other Key Parameters		30,578	5	4	99.98	99.99	99.95

Parameter	Prescribed Concentration or Value (PCV)	Total No. of Tests	No. Failed Tests	No. Zones with Failures	% Compliance in 2021	% Compliance in 2020	% Compliance in 2019
Other Parameters							
1,2 Dichloroethane	3µg/l	1,463	0	0	100.00	100.00	100.00
Aldrin	0.1µg/l	0	0	0	N/A	N/A	N/A
All Other Individual Pesticides	0.1µg/l	4,584	1	1	99.98	100.00	99.98
Ammonium	0.5mg NH ₄ /l	5,255	0	0	100.00	100.00	100.00
Antimony	5µg Sb/l	1,459	0	0	100.00	100.00	100.00
Arsenic	10µg As/l	1,458	0	0	100.00	100.00	100.00
Benzene	1µg/l	1,463	0	0	100.00	100.00	100.00
Benzo 3,4 Pyrene	0.01µg/	1,462	0	0	100.00	100.00	100.00
Boron	1mg B/l	1,459	0	0	100.00	100.00	100.00
Bromate	10µg BrO ₃ /l	1,459	0	0	100.00	100.00	100.00
Cadmium	5µg Cd/l	1,463	0	0	100.00	100.00	100.00
Chloride	250mg Cl/l	1,460	0	0	100.00	100.00	100.00
Chromium	50µg Cr/l	1,459	0	0	100.00	100.00	100.00
Conductivity	2500µS/cm at 20°C	5,256	0	0	100.00	100.00	100.00
Copper	2mg Cu/l	1,459	0	0	100.00	100.00	100.00
Cyanide	50µg CN/l	1,460	0	0	100.00	100.00	100.00
Dieldrin	0.1µg/l	0	0	0	N/A	N/A	N/A
Fluoride	1.5mg F/l	1,459	0	0	100.00	100.00	100.00
Gross alpha activity*	0.1Bq/l	1,457	0	0	100.00	100.00	100.00
Gross beta activity*	1Bq/l	1,457	0	0	100.00	100.00	100.00
Heptachlor	0.03µg/l	0	0	0	N/A	N/A	N/A
Heptachlor epoxide	0.1µg/l	0	0	0	N/A	N/A	N/A

Parameter	Prescribed Concentration or Value (PCV)	Total No. of Tests	No. Failed Tests	No. Zones with Failures	% Compliance in 2021	% Compliance in 2020	% Compliance in 2019
Mercury	1µg Hg/l	1,460	0	0	100.00	100.00	100.00
Nitrate	50mg NO ₃ /l	2,834	0	0	100.00	100.00	100.00
Nitrite/Nitrate formula	<1mg/l	2,834	0	0	100.00	100.00	100.00
PAH - Sum of 4 Substances	0.1µg/l	1,468	0	0	100.00	100.00	100.00
Pesticides - Total Substances	0.5µg/l	1,073	0	0	100.00	100.00	100.00
Radon	Bq/l	35	0	0	100.00	100.00	100.00
Selenium	10µg Se/l	1,463	0	0	100.00	100.00	100.00
Sodium	200mg Na/l	1,458	0	0	100.00	100.00	100.00
Sulphate	250mg SO ₄ /l	1,459	0	0	100.00	100.00	100.00
Tetrachloroethene/Trichloroethene	10µg/l	1,456	0	0	100.00	100.00	100.00
Tetrachloromethane	3µg/l	1,466	0	0	100.00	100.00	100.00
Scotland total		136,455	110	57**	99.92	99.95	99.92

* Gross alpha and gross beta activity are not included in the Total other parameters or Scotland total figures and are not used to calculate the total compliance figure. This is because there is no PCV value for these variables. They form part of a monitoring program to detect any radionuclides in accordance with [The Public Water Supplies \(Scotland\) Amendment Regulations 2017](#). The total number of samples including monitoring for radon, which is taken at WTW final water but applied across Water Supply Zones.

** A supply zone can fail for more than one parameter. This means that the total number of zones that failed for *at least* one parameter is less than the sum of the No. Zones with Failures column.

Table 20 Water Quality Consumer Contacts Received by Scottish Water

Contact Category	Number of Contacts					% Change on 2020	Contact rate per 10,000 population				
	2021	2020	2019	2018	2017		2021	2020	2019	2018	2017
Appearance											
Discoloured Water	17,887	12,989	6,623	6,062	4,710	38%	33.2	24.2	12.3	11.3	9.4
Aerated (Milky) Water	1,662	1,660	882	1,072	1,195	0%	3.1	3.1	1.6	2.0	2.4
Particles in Water	543	553	365	455	551	-2%	1.0	1.0	0.7	0.8	1.1
Organisms in Water	30	40	33	38	39	-25%	0.1	0.1	0.1	0.1	0.1
Taste and Odour											
Chlorine	731	985	578	738	747	-26%	1.4	1.8	1.1	1.4	1.5
Metallic	602	356	358	349	430	69%	1.1	0.7	0.7	0.6	0.9
Solvent/Fuel Taste/Smell	14	31	21	36	61	-55%	0.0	0.1	0.0	0.1	0.1
Musty/Earthy	1,058	621	639	712	908	70%	2.0	1.2	1.2	1.3	1.8
TCP/Chemical Taste/Smell	505	525	302	367	340	-4%	0.9	1.0	0.6	0.7	0.7
Other contact about Water Quality											
Illness due to Water	733	286	240	287	258	156%	1.4	0.5	0.4	0.5	0.5
Other Contact	5	96	617	8	0	-95%	0.0	0.2	1.1	0.0	0.0
Total Contacts about Water Quality	23,770	18,142	10,124	9,239	10,659	31%	44	34	20	19	19

* From 2019, Scottish Water have a new customer contact system that categorises customer contacts differently.