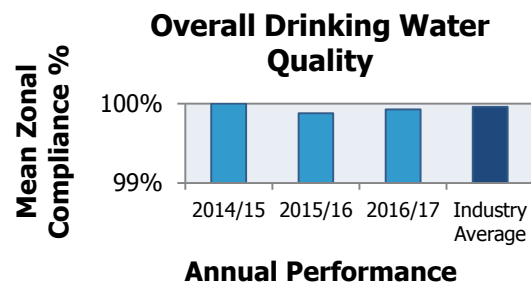


# Water Quality Report

1 April 2016 – 31 March 2017

We monitor potentially harmful microbial and chemical components of water through sampling and a proactive water safety planning approach. Indices are used as a reporting tool for water quality data across England and Wales and Manx Utilities adopts this approach. The indices comprise parameters appropriate as indicators for each area of significance and are calculated by taking the average of mean zonal compliance figures for each parameter.

Our regulator, the Public Analyst, acts as an independent auditor on water quality supplied by Manx Utilities, taking independent samples monthly and whenever called upon to do so by DEFA, the Director of Public Health or any Local Authority. The Drinking Water Inspectorate undertakes this regulatory role in England and Wales.



## Water supply arrangements

Our assets		Water supplied		Area of supply Isle of Man; Douglas and Sulby Water Treatment Works supply zones
Number of treatment works	2	Water supplied (Ml/day)	29	
Number of service reservoirs	28	From surface sources (%)	100	
Number of water supply zones	13	From ground sources (%)	0	
Length of mains pipe (km)	1816.84	From mixed sources (%)	0	
Testing		Population served		
Number of statutory tests	34,449	Population supplied	83,314	
Number of operational	10,025	Consumer complaints per 1000 people supplied	1.61	

## Drinking water quality summary data

Indices	Manx Utilities figures			Industry average
	2014/15	2015/16	2016/17	2016
<b>Overall drinking water quality*</b>	100%	99.88%	99.93%	99.96%
<b>Water treatment;</b>				
Process control index	100%	100%	99.75%	>99.99%
Disinfection index	100%	100%	100%	99.99%
<b>Distribution systems;</b>				
Distribution maintenance index	100%	99.94%	100%	99.92%
Reservoir integrity index	99.87%	99.93%	99.83%	99.97%
<b>Building water systems;</b>				
Parameters influenced by domestic water systems	99.97%	99.94%	99.98%	99.85%

\*Overall drinking water quality as represented by mean zonal compliance for 33 parameters.

## Quality of water leaving water treatment works - European standards

Parameter name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Average result
Nitrite (Works)	A013B	0.10 mg/l	24	0	0.05	0.05	0.05
Cryptosporidium	C111	<1 oocysts per 10l	104	0	0	0.03	0.01

## Quality of water leaving water treatment works - national standards

Parameter Name	Parameter Code	Prescribed Concentration or Value	No. of Tests	Tests Failed	Minimum result	Maximum result	Average result
Coliform Bacteria	C001	0/100 ml	410	0	0	0	0
E. coli	C002	0/100 ml	410	0	0	0	0

## Quality of water leaving water treatment works - additional monitoring requirements

Parameter Name	Parameter Code	Prescribed Concentration or Value	No. of Tests	Tests Failed	Minimum result	Maximum result	Average result
Colony Counts @ 22°C	C007	15/ml**	410	1	0	17	0.13
Colony Counts @ 37°C	C013	2/ml**	410	4	0	25	0.14
Residual Disinfectant - Free	C009	n/a	410	0	0.26	1.41	0.98
Residual Disinfectant - Total	C010	n/a	410	0	0.29	1.47	1.03
Turbidity	A002A	1 NTU	410	0	0.02	0.2	0.06
Chloride	D002A	250 mgCl <sup>-</sup> /l	24	0	16.7	20.9	18.2
Clostridium Perfringens	C004A	0/100ml	98	0	0	0	0
Sulphate	A007	250 mgSO <sub>4</sub> /l	24	0	21.2	34.4	26.82
Total Organic Carbon	A017	15 mgC/l**	24	0	2	6	3.88
Conductivity	D001	2500 µS/cm @ 20°C	120	0	7.53	177.8	149.76
Boron	D005A	1000µgB/l	24	0	20	20	20
Cyanide	B003	50 µgCN/l	16	0	0.2	12	5.21
Fluoride	A027	1500 µgF/l	24	0	50	50	50
Mercury	B005	1 µgHg/l	24	0	0.1	0.1	0.1

\*\*Manx Utilities specification. UK standard is 'no abnormal change'

## Quality of water leaving service reservoirs - national standards

Parameter name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Reservoirs failing standard***
Coliform Bacteria	C001	0/100 ml	1505	4	0	7	0
E. coli	C002	0/100 ml	1505	1	0	6	0

\*\*\*Compliance required as to 95% of samples from each service reservoir (regulation 4(6))

## Quality of water leaving service reservoirs - additional monitoring requirements

Parameter name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Average result
Colony Counts @ 22°C	C007	100/ml**	1505	4	0	896	2.05
Colony Counts @ 37°C	C013	10/ml**	1505	7	0	300	0.67
Residual Disinfectant - Total	C010	n/a	1505	0	0.05	1.71	0.62

\*\*Manx Utilities specification. UK standard is 'no abnormal change'

## Quality of water at consumer's tap (zones) - European standards

Parameter Name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Average result
1,2 Dichloroethane	F001	3 µg/l	93	0	0.2	3	1.23
Antimony	B008A	5 µgSb/l	93	0	5	5	5
Arsenic	B001A	10 µgAs/l	93	0	0.12	5	4.95
Benzene	F002	1 µg/l	93	0	0.05	1	0.98
Benzo (a) Pyrene	D007	10 ng/l	93	0	5	5	5
Bromate	F003	10 µgBrO3/l	93	0	0.9	8.1	1.98
Cadmium	B002	5 µgCd/l	199	0	0	5	0.52
Chromium	B004	50 µgCr/l	93	0	5	5	5
Copper	A024A	2000 µgCu/l	199	0	20	78.1	21.58
E. coli	C002	0/100ml	318	0	0	0	0
Enterococci	C003	0/100ml	93	0	0	0	0
Lead (>10 µg/l)	B007B	10 µgPb/l	199	0	1	5	4.96
Nickel	B006A	20 µgNi/l	199	0	3	11.5	5.01
Nitrate	A012	50 mgNO3/l	93	0	0.61	2.13	1.16
Nitrate/Nitrite Formula	A013C	<1 mg/l	93	0	0.03	0.06	0.05
Nitrite (consumers tap)	A013A	0.5 mgNO2/l	93	0	0.01	0.5	0.06
Polycyclic Aromatic Hydrocarbon	B011F	0.1 µg/l	93	0	0.02	0.09	0.03
Selenium	B009	10 µg/l	93	0	5	5	5
Tetrachloroethene and Trichloroethene	D009B	10 µg/l	93	0	2	10	2.95
Trihalomethanes: Total	D011	100 µg/l	93	2	4	116.3	50.1

## Quality of water at consumer's tap (zones) - national standards

Parameter Name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Average result
Aluminium	A021	200 µgAl/l	199	0	10	77.5	20.14
Colour	A001	20 Hazen	199	0	1	1.2	1
Iron	A022	200 µgFe/l	199	0	10	67.2	21.58
Manganese	A023	50 µgMn/l	199	0	5	20	5.12
Organoleptic Odour	A003	n/a	199	0	0	3	0.48
Organoleptic Taste	A004	n/a	199	0	0	3	0.29
Sodium	A009	200 mgNa/l	93	0	9.61	13.6	11.84
Tetrachloromethane	D008	3 µg/l	93	0	0.1	3	1.23
Turbidity	A002	4 NTU	199	0	0.02	1.29	0.09

## Quality of water at consumer's tap (zones) - additional monitoring requirements

Parameter Name	Parameter code	Prescribed concentration or value	No. of tests	Tests failed	Minimum result	Maximum result	Average result
Ammonium	A014	0.5 mgNH <sub>4</sub> /l	197	0	0.02	0.1	0.02
Coliform Bacteria	C001A	0/100ml**	318	1	0	1	0
Colony Counts @ 22°C	C007	100/ml**	199	2	0	354	4.36
Colony Counts @ 37°C	C013	10/ml	199	7	0	239	2.07
Hydrogen ion (pH)	A006	pH >6.5 - <9.5	318	0	6.57	9.2	7.4
Residual Disinfectant - Free	C009	n/a	318	0	0.1	1.1	0.63
Residual Disinfectant - Total	C010	n/a	318	0	0.14	1.22	0.7

\*\*Manx Utilities specification. UK standard is 'no abnormal change'