

2023 WATER QUALITY REPORT FOR DRINKING WATER IN YOUR AREA with DATA AVERAGED OVER 12 MONTHS – Jan 2022 to Dec 2022

Name of water supply zone: Z605 BILLERICAY & BRENTWOOD

Water source(s): *Ground and Surface (Mixed) Water*

Drinking Water Introduction:

Essex & Suffolk Water's supply area is divided into zones, and these are generally supplied by more than one water treatment works.

This means that the water you receive in your home or business is normally a mix or blend. It also means that where we extract the water from, known as the catchment, will have a variety of water sources. Sometimes the blend changes and this can also change the taste and appearance of the water.

But it is always provided to you in accordance with our country's regulations, specifically the Water Supply (Water Quality) Regulations. We do this by sampling and testing customer taps and reporting our findings to the Drinking Water Inspectorate (DWI).

Throughout the year, we preserve and clean our network of pipes that carry the water to your homes and businesses to maintain the high quality of water we supply. You can refer to our website here - <https://www.eswater.co.uk/>, for an up to-date record of where we are out working. Much of our work is programmed and planned, with our regulator (DWI) remaining informed and monitoring our progress. Other work may be due to bursts, new mains or supply changes, but all our water is tested and monitored throughout to ensure you continue to receive the best possible clean, clear and wholesome water.

What can your water contain?

Chlorine – Water is treated with a small amount of chlorine to keep it disinfected and stop any harmful organisms growing in it, as it travels to your tap. Your Water Supply Zone has a small amount of ammonia added and this means that the water supply is chloraminated .

Fluoride – Is naturally occurring in all water sources. Your Water Supply Zone does not have any additional Fluoride added by us.

Minerals/hardness – Water which has a lot of natural minerals dissolved in it is called hard water. It is measured using several different scales and the information can be seen in the table of results below. With blended water, hardness is given as a range. Hard water advice is available on our website - <https://www.eswater.co.uk/services/water/water-quality/hard-water/>

Lead – Some older properties, pre-1970, may have lead pipes or lead soldering and we are working to remove lead in your water zone. Please visit our website or call us and we can arrange a free water test.

Testing your water quality:

Essex & Suffolk Water work hard to bring you clean water. You can read more about our mission - <https://www.eswater.co.uk/services/water/water-quality/>

Every day, we carry out water sampling and testing to ISO 17025 certification. This is a general requirement used by testing and calibration laboratories to make sure that the highest quality water gets through to your taps. Our testing of your water supply shows that we met or exceeded the requirements of the regulations.

All sample tap failures are fully investigated to identify the source of the problem as soon as they occur. We then take action to correct the issues and make recommendations to our customers about their properties plumbing if this is the cause. During the investigation and following any changes we take further samples to ensure that we provide wholesome water, and we report all these activities to the Regulator DWI.

Table of water test and water sample results:

µg - micrograms or one part per billion = one drop in an Olympic sized swimming pool.

mg - milligrams or one part per million = one drop in 100 litres.

Total hardness:

The water in your area classed as hard.

Scale/units	Average	Maximum	Minimum
CaCO ₃ mg/l Calcium Carbonate	265.43	293.40	207.11
mg/l Ca	92.26	103.39	68.31
total hardness	106.17	117.36	82.84
Degrees Clarke	18.47	20.42	14.41
French Degrees	26.54	29.34	20.71
German Degrees	15.08	16.66	11.76

Brewers information:

Scale/units	Average	Maximum	Minimum
CaCO ₃ mg/l Calcium Carbonate	265.43	293.40	207.11
mg/l Chloride	71.25	79	65
mg/l alkalinity (HCO ₃)	239.39	284.50	198.29
mg/l Ca - Calcium	92.26	103.39	68.31
mg/l Mg -Magnesium	8.46	8.84	7.84
mg/l Sodium	44.00	50.63	40.07
mg/l Sulphate	75.28	82.35	68.53

Testing your water quality: The table below details analysis on naturally occurring compounds as well as those used during water treatment

THE TEST	FURTHER INFORMATION	OFFICIAL STANDARD	UNITS
Alkalinity	Occurs naturally where water passes through chalk or limestone.	No standard	mg/l
Aluminium	Found naturally in all water sources and is used in the treatment process but is effectively removed and carefully monitored at the water treatment works.	200	µgAl/l
Ammonium	Is naturally present in some supplies.	0.5	mgNH ₄ /l
Antimony	Not normally found.	5	µgSb/l
Arsenic	Not normally present. Very low levels appear naturally.	10	µgAs/l
Boron	Occurs naturally.	1	mgB/l
Cadmium	Not normally present. Very low levels appear naturally.	5	µgCd/l
Calcium	Occurs naturally especially if water passes through limestone or chalk.	No standard	mgCa/l
Chloride	Occurs naturally.	250	mgCl/l
Chlorine	Small amounts of chlorine are added to our water to kill any harmful bacteria. Its use was responsible for helping eliminate diseases such as typhoid and cholera. Occasionally customers may notice a slight chlorine taste, but this is completely harmless. (World Health Organisation guideline value - 5mg/l)	No standard	mgCl ₂ /l
Chromium	Not normally present. Very low levels appear naturally.	50	µgCr/l
<i>Clostridium perfringens</i>	Groups of bacteria indicating possible faecal contamination of water supplies. An occurrence of <i>Clostridium perfringens</i> is always investigated immediately.	0	per 100ml
Coliform bacteria (total coliforms)	These bacteria indicate that the supply may have been contaminated. In most cases this is from the tap itself and may be present because of normal domestic operations. We recommend that taps, including the inside of the spout, are cleaned regularly. An occurrence of coliform bacteria is always investigated immediately.	0	per 100ml
Colony counts 3 days at 22° C	This is a measure of a number of groups of naturally occurring bacteria and is not indicative of any health hazard. However, unusually high numbers are investigated.	No abnormal change	per ml
Colour	Water may occasionally have a slight tint which is caused by natural colouring such as peat.	20	mg/1 Pt/Co scale
Conductivity	A measure of the dissolved mineral content of the water.	2500	µS/cm
Copper	Presence is largely due to the influence of domestic plumbing systems.	2	mgCu/l
Cyanide	Not normally present. Very low levels appear naturally.	50	µgCN/l
<i>E. coli</i> Enterococci	Groups of bacteria indicating possible faecal contamination of water supplies. An occurrence of <i>E. coli</i> or Enterococci is always investigated immediately.	0	per 100ml
Fluoride	Occurs naturally in some of our supplies. In other areas fluoride is added at the treatment works at the request of the Health Authority to protect the teeth of children.	1.5	mgF/l
pH (Hydrogen ion)	The pH of water is controlled at the treatment works to prevent corrosion of pipes and fittings.	>6.5, <9.5	pH value
Iron	Occurs naturally and is removed at the treatment works. However, some mains are made from cast iron and may corrode to give the water a rust-coloured appearance which, while undesirable, is not a health hazard.	200	µgFe/l
Lead	Many homes still have lead pipes and it is normally in these properties where the standard is exceeded. Mains water contains little or no lead.	10	µgPb/l
Magnesium	Occurs naturally as a result of passage of water through the ground.	No standard	µg/l

THE TEST	FURTHER INFORMATION	OFFICIAL STANDARD	UNITS
Manganese	Occurs naturally, may build up on corrosion products within mains and is carefully monitored at treatment works.	50	ugMn/l
Mercury	Very low levels appear naturally.	1	µgHg/l
Nickel	Not normally present. Very low levels appear naturally.	20	µgNi/l
Nitrate	Occurs naturally from both mineral or soil processes and from agricultural activity.	50	mg/NO ₃ /l
Nitrite	May be associated with the presence of ammonia or nitrate in river water.	0.5	mg/NO ₂ /l
Odour (Quantitative)	As well as chemical tests, we also use a team of experienced testers, who compare the sample with one which is known to be free from taste or smell, any abnormal change detected in odour/taste will be investigated.	Any positive detection	Dilution No (at 25° C)
Odour (Qualitative)	Subjective assessment of the type and magnitude of such characteristics.	No standard	
PAH	Polycyclic Aromatic Hydrocarbons associated with fossil fuels and if found in water they often originate from coal tar linings in old mains.	0.1	µg/l
Benzo (a) pyrene	An individual Polycyclic Aromatic Hydrocarbon.	0.010	µg/l
Individual pesticides	The presence of these compounds is due to their use by farmers, industry and local authorities etc. The current standard is not health based and therefore minor incidents where the standard is exceeded are unlikely to represent a risk to health.	0.1	µg/l
Total pesticides	The sum of the above.	0.5	µg/l
Aldrin Dieldrin Heptachlor Heptachlorepoxide	These pesticides have a lower standard than the other pesticides detailed above.	0.03	µg/l
Phosphorus	Occurs naturally as well as in fertilisers and detergents but rarely proves a problem in our supply. Phosphorus is dosed to control lead concentrations from private plumbing.	No standard	mgP/l
Selenium	Not normally found.	10	µgSe/l
Sodium	Occurs naturally as a result of passage of water through the ground.	200	mgNa/l
Sulphate	Occurs naturally as a result of passage of water through the ground.	250	mgSO ₄ /l
Taste (Quantitative)	As well as chemical tests, we also use a team of experienced testers, who compare the sample with one which is known to be free from taste or smell. Any abnormal change detected in odour/taste will be investigated.	Any positive detection	Dilution No. (at 25° C)
Taste (Qualitative)	Subjective assessment of the type and magnitude of such characteristics.	No standard	
Temperature	During warm spells the temperature of tap water will increase, changing its familiar taste slightly but not its quality. If this occurs, you could chill drinking water in the fridge.	No standard	deg. C
Tetrachloroethane Trichloroethane Tetrachloromethane	Chlorinated solvents which are used in industry and dry-cleaning processes and should not usually be found in the water supply.	(Combined standard of 10) 3	µg/l µg/l
Total hardness	Occurs naturally where water passes through chalk or limestone.	No standards	mg/l
TOC	Total Organic Carbon content of the water and a measure of effectiveness of treatment in removing natural organic compounds from the supply.	No abnormal change	mg/l
Total Trihalomethanes	Formed when chlorine is added to water as a disinfectant and reacts with organic substances. The standard is set well below the level at which it might cause health problems.	100	µg/l
Turbidity	This is the clarity of the water which can be affected by minute air bubbles or finely suspended particles. If you allow a glass of water to stand for a few minutes, it will normally clear.	4	NTU
Zinc	Its presence is largely due to the influence of domestic plumbing systems.	No standard	µgZn/l

Table of sampling results showing parameters looked for in drinking water some are naturally occurring in the raw untreated water and other are checked as part of the the water treatment process.

Parameter (Z605)	Units	No. of samples taken in year	PCV limit	No. samples above PCV	Min	Mean	Max
1,2-dichloroethane	ug/l	12	3	0	< 0.200	< 0.200	< 0.200
2,4-D	ug/l	12	0.1	0	< 0.004	< 0.009	< 0.011
aluminium	ug/l Al	52	200	0	< 3.900	< 4.623	11.048
ammonium	mg/l NH4	52	0.5	0	0.015	0.146	0.24
AMPA	ug/l	12	0.1	0	< 0.012	< 0.012	< 0.012
antimony	ug/l Sb	8	5	0	0.258	0.275	0.301
arsenic	ug/l As	8	10	0	0.62	0.864	1.121
asulam	ug/l	12	0.1	0	< 0.015	< 0.016	< 0.017
benazolin	ug/l						
bentazone	ug/l	12	0.1	0	< 0.003	< 0.004	< 0.004
benzene	ug/l	12	1	0	< 0.030	< 0.030	< 0.030
benzo(a)pyrene	ug/l	8	0.01	0	< 0.002	< 0.002	< 0.002
boron	mg/l B	12	1	0	0.054	0.06	0.069
bromate	ug BrO3/l	8	10	0	< 0.500	< 0.745	< 0.990
cadmium	ug/l Cd	8	5	0	< 0.018	< 0.018	< 0.018
carbetamide	ug/l	12	0.1	0	< 0.008	< 0.008	< 0.008
chloridazon	ug/l	12	0.1	0	< 0.005	< 0.010	< 0.013
chloride	mg/l Cl	12	250	0	65	71.25	79
chlorthalonil	ug/l	12	0.1	0	< 0.007	< 0.007	< 0.007
chlortoluron	ug/l	12	0.1	0	< 0.003	< 0.003	< 0.003
chromium	ug/l Cr	8	50	0	< 0.170	< 0.170	< 0.170
clopyralid	ug/l	12	0.1	0	< 0.010	< 0.015	0.029
clostridium perfringens (confirmed)		52	>0	0	0	0	0
colony counts after 3 days at 22C		52		0	0	> 7.365	>300.000
colour	mg/l Pt/C	52	20	0	< 0.810	< 1.483	2.1
copper	mg/l Cu	8	2	0	0.008	0.051	0.135
cyanide (total)	ug/l CN	12	50	0	< 5.500	< 5.500	< 5.500
cypermethrin	ug/l	N/A					
dicamba	ug/l	12	0.1	0	< 0.017	< 0.024	< 0.028
dichlorprop	ug/l	12	0.1	0	< 0.004	< 0.009	< 0.011
diazinon	ug/l	N/A					
dieldrin	ug/l	12	0.03	0	< 0.002	< 0.002	< 0.002
diflufenican	ug/l	12	0.1	0	< 0.007	< 0.007	< 0.007
diuron	ug/l	12	0.1	0	< 0.006	< 0.006	< 0.006
E.coli	/100ml	180	>0	0	0	0	0
electrical conductivity	uS/cm 20C	52	2500	0	542	635.44	699
enterococci (confirmed)	/100ml	8	>0	0	0	0	0
ethenes (total by calculation)	ug/l	12	10	0	0	0	0
ethofumesate	ug/l	12	0.1	0	< 0.007	< 0.007	< 0.007
flufenacet	ug/l	12	0.1	0	< 0.005	< 0.007	0.02
fluoride	mg/l F	12	1.5	0	0.24	0.293	0.33
fluroxypyr	ug/l	12	0.1	0	< 0.006	< 0.010	< 0.018

PCV = Prescribed Concentration or Value and '>' means greater than, '<' means less than

Parameter (Z605)	Units	No. of samples taken in		No. samples above		Min	Mean	Max
		year	PCV limit	PCV	PCV			
glyphosate	ug/l	12	0.1	0	< 0.008	< 0.008	0.011	
heptachlor	ug/l	12	0.03	0	< 0.003	< 0.003	< 0.003	
heptachl epoxides	ug/l	12	0.03	0	0	0	0	
hydrogen ion (pH)	pH units	52	9.5	0	7.258	7.54	7.8	
iron	ug/l Fe	52	200	0	< 5.200	< 7.113	16.141	
isoproturon	ug/l	12	0.1	0	< 0.003	< 0.003	< 0.003	
lead (total - 10)	ug/l Pb	8	10	0	< 0.065	< 0.180	0.553	
lenacil	ug/l	12	0.1	0	< 0.006	< 0.009	< 0.011	
manganese	ug/l Mn	52	50	0	< 0.280	< 0.387	1.138	
MCPA	ug/l	12	0.1	0	< 0.002	< 0.008	< 0.019	
MCPP	ug/l	12	0.1	0	< 0.004	< 0.009	< 0.011	
mercury	ug/l Hg	12	1	0	< 0.022	< 0.022	< 0.022	
metaldehyde	ug/l	12	0.1	0	< 0.021	< 0.022	0.035	
metamitron	ug/l	12	0.1	0	< 0.007	< 0.007	< 0.007	
metazachlor	ug/l	12	0.1	0	< 0.015	< 0.015	< 0.015	
nickel	ug/l Ni	8	20	0	1.532	2.066	3.165	
nitrate	mg/l NO3	52	50	0	4.3	15.427	24	
nitrite	mg/l NO2	52	0.5	0	< 0.006	< 0.067	0.31	
nitrite/nitrate formula		52	1	0	< 0.088	< 0.331	0.533	
odour (quantitative)	DN	52	>0	0	0	0	0	
oxamyl	ug/l	12	0.1	0	< 0.002	< 0.002	< 0.002	
pendimethalin	ug/l	12	0.1	0	< 0.006	< 0.006	< 0.006	
pentachlorophenol	ug/l	12	0.1	0	< 0.006	< 0.010	< 0.012	
pesticides total (calculated)	ug/l	12	0.5	0	0.011	0.039	0.123	
picloram	ug/l	12	0.1	0	< 0.012	< 0.021	< 0.026	
propiconazole	ug/l	12	0.1	0	< 0.003	< 0.003	0.003	
propyzamide	ug/l	12	0.1	0	< 0.012	< 0.020	0.039	
prothioconazole	ug/l	12	0.1	0	< 0.002	< 0.002	< 0.002	
quinmerac	ug/l	12	0.1	0	< 0.005	< 0.009	< 0.013	
residual disinfectant - total	mg/l	180		0	0.07	0.596	1.08	
selenium	ug/l Se	8	10	0	< 0.830	< 0.830	< 0.830	
sodium	mg/l Na	8	200	0	40.072	43.995	50.633	
sulphate	mg/l SO4	12	250	0	68.529	75.277	82.353	
taste (quantitative)	DN	52	>0	0	0	0	0	
tebuconazole	ug/l	12	0.1	0	< 0.004	< 0.004	< 0.004	
terbutryn	ug/l	12	0.1	0	< 0.005	< 0.005	< 0.005	
tetrachloromethane	ug/l	12	3	0	< 0.110	< 0.110	< 0.110	
total PAH	ug/l	8	0.1	0	0	0	0	
total coliforms	/100ml	180	>0	0	0	0	0	
total organic carbon	mg/l C	12		0	3.1	3.425	3.9	
total THM	ug/l	8	100	0	24.3	33.15	38.5	
triclopyr	ug/l	12	0.1	0	< 0.012	< 0.012	< 0.012	
turbidity	NTU	52	4	0	< 0.090	< 0.101	0.16	

Any samples which don't meet the regulatory limits are fully investigated, with corrective actions put in place and are reported to the DWI.