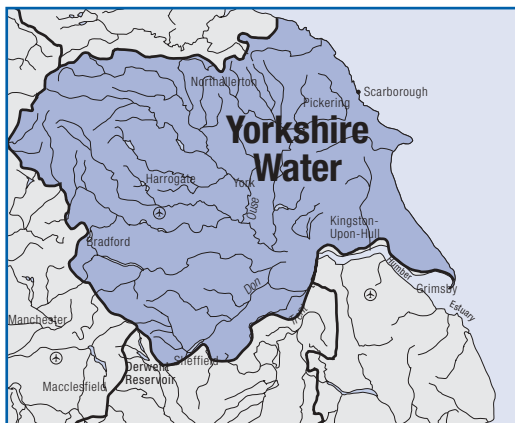


# 25 Yorkshire Water Services Limited

## Overall Water Quality supplied by Yorkshire Water Services Limited in 2002

- A total of 266,444 tests were carried out on samples taken by Yorkshire Water in 2002.
- Of these tests, 99.89% complied with the Regulations.



### Company Information

Amount of Water Supplied:	1,313 MI/d
Consumers Supplied:	4.71 million
Areas of Supply:	Yorkshire
Water Composition:	78% from rivers and reservoirs 22% from boreholes and aquifers
Treatment Works:	102
Service Reservoirs:	414
Km of Mains:	31,000
Water Supply Zones:	205

## Water Quality at Treatment Works, in Service Reservoirs and in Water Supply Zones

To be wholesome, water must comply with the standards for the parameters set out in the Water Supply (Water Quality) Regulations 1989. In 2002, the Company carried out a total of 266,444 tests on samples taken at water treatment works, from service reservoirs and in water supply zones and of these, 99.89% complied with the relevant water quality standards set down in the Regulations. A list of the parameters, the relevant standards and their significance can be found at the beginning of this section.

### Water Quality leaving Treatment works

	2002	2001	2000
<b>Number of water treatment works</b>	102	109	121
<b>COLIFORMS</b>			
<b>Total number of tests</b>	10,309	10,336	12,024
– number containing coliforms	15	4	6
– % containing coliforms	0.15%	0.04%	0.05%
<b>Treatment works with coliforms detected</b>	<b>10</b>	<b>3</b>	<b>5</b>
– % of all works with coliforms detected	9.80%	2.75%	4.13%
<b>FAECAL COLIFORMS</b>			
<b>Total number of tests</b>	10,309	10,336	12,024
– number containing faecal coliforms	0	3	3
– % containing faecal coliforms	0.00%	0.03%	0.02%
<b>Treatment works with faecal coliforms detected</b>	<b>0</b>	<b>2</b>	<b>2</b>
– % of all works with faecal coliforms detected	0.00%	1.83%	1.65%

There has been a significant increase since 2001 in the number of treatment works and in the number of tests carried out on samples from treatment works in which total coliforms were detected. However, failures of the coliform standard at eight works were considered trivial. At the other two works, the Company has taken remedial action.

In 2002, 2,674 regulatory samples for *Cryptosporidium* were taken at eight sites. Very low numbers of oocysts were detected in 16 samples from six sites. All results were well below the treatment standard and there were no reported outbreaks of cryptosporidiosis.

### Water Quality in Service Reservoirs

	2002	2001	2000
<b>Number of service reservoirs</b>	414	418	432
<b>COLIFORMS</b>			
<b>Total number of tests</b>	20,933	21,224	21,162
– number containing coliforms	49	39	27
– % containing coliforms	0.23%	0.18%	0.13%
Service reservoirs with coliforms detected	41	35	25
<b>Service reservoirs with coliforms detected in more than 5% of tests</b>	<b>3</b>	<b>1</b>	<b>0</b>
– % of all service reservoirs	0.72%	0.24%	0.00%
<b>FAECAL COLIFORMS</b>			
<b>Total number of tests</b>	20,933	21,225	21,162
– number containing faecal coliforms	11	8	10
– % containing faecal coliforms	0.05%	0.04%	0.05%
<b>Service reservoirs with faecal coliforms detected</b>	<b>11</b>	<b>8</b>	<b>9</b>
– % of all service reservoirs with faecal coliforms detected	2.66%	1.91%	2.08%

There were failures of the coliform standard at three service reservoirs. However, the failure at one was considered trivial. At the other two service reservoirs the Company has taken action to prevent the failure recurring. Failures of the faecal coliform standard at 11 service reservoirs were considered trivial. Differences over the last three years in the number of service reservoirs, and in the number of tests carried out on samples from service reservoirs, in which coliforms or faecal coliforms were detected were not considered significant.

### Water Quality in Water Supply Zones

The table below shows the data for the key parameters and any other parameters where there was a failure of the standard. All other parameters were fully compliant.

Parameter	Total number of tests	Tests not meeting the prescribed concentration or value		Number of failures covered by Undertakings	Number of zones not complying with the standards		
		No	%		2002	2001	2000
Coliforms	12,572	61	0.49	0	0	0	1
Faecal coliforms	12,572	7	0.06	0	7	1	8
Colour	12,561	0	0.00	0	0	1	3
Turbidity	12,562	2	0.02	0	2	9	5
Odour	1,622	0	0.00	0	0	0	0
Taste	1,619	0	0.00	0	0	0	0
Hydrogen ion	12,562	6	0.05	2	6	0	10
Nitrate	1,876	1	0.05	0	1	2	0
Nitrite	1,902	8	0.42	0	3	5	8
Aluminium	6,507	12	0.18	4	10	4	11
Iron	6,507	51	0.78	49	38	42	58
Manganese	6,507	15	0.23	14	14	13	19
Lead	1,023	2	0.20	0	2	2	3
PAH	854	5	0.59	0	3	0	9
Trihalomethanes	943	10	1.06	0	3	1	3
Total pesticides	1,321	0	0.00	0	0	4	0
Clopyralid	1,054	1	0.09	0	1	0	0
2,4-D	1,138	17	1.49	0	17	0	0
Isoproturon	1,039	0	0.00	0	0	4	4
MCPA	1,131	14	1.24	0	14	1	0
Mecoprop	1,078	0	0.00	0	0	7	0
Simazine	971	1	0.10	0	1	0	0
Other pesticides	75,331	0	0.00	0	0	0	0
All others	26,034	0	0.00	0	0	0	0
<b>TOTAL</b>	<b>201,286</b>	<b>213</b>	<b>0.11%</b>	<b>69</b>			

205 zones in 2002, 205 zones in 2001, 214 zones in 2000

The fifth column indicates the number of failures in zones already covered by legally binding undertakings given by the Company. These undertakings require remedial work to be carried out to ensure compliance with the individual standard.

## The New Regulations

In 2002, the Company carried out monitoring for the six new parametric values set down in the new Water Supply (Water Quality) Regulations 2000. These Regulations come into force on 25 December 2003. The results are shown in the table below.

Parameter	Total Number of tests	New standard	Tests not meeting the new standard
Benzene	1,544	1.0 µg/l	1
Bromate	664	10.0 µg/l	16
1,2 dichloroethane	1,544	3.0 mg/l	0
Nitrite (ex-water treatment works)	2,212	0.1 mg/l	0
<i>Clostridium perfringens</i>	192	0/100 ml	0
Enterococci	766	0/100 ml	1

Compliance data for 2002 has also been analysed against the revised standards and the results are shown in the following table.

Parameter	Total number of tests	Current Standard	Number of tests not meeting current standard	Revised Standard	Number of tests not meeting revised standard
Antimony	205	10.0 µg/l	0	5.0 µg/l	0
Arsenic	205	50.0 µg/l	0	10.0 µg/l	0
Boron	205	2.0 mg/l	0	1.0 mg/l	0
Copper	824	3.0 mg/l	0	2.0 mg/l	0
Lead	1,023	50.0 µg/l	2	25.0 µg/l <sup>1</sup> 10.0 µg/l <sup>2</sup>	7 25
Nickel	205	50.0 µg/l	0	20.0 µg/l	0
Nitrite (at consumers' taps)	1,902	0.1 mg/l	8	0.5 mg/l	0
PAH	854	0.2 µg/l	5	0.1 µg/l	0
Tetrachloroethene	943	30.0 µg/l	0	} 10.0 µg/l	0
Trichloroethene	943	10.0 µg/l	0		

Details of the new and revised standards, and the reasons for the revisions where applicable, can be found in chapter J "New Regulations and Associated Programmes of Work".

- 1 From 25.12.03  
2 From 25.12.13

## Company Audit and Inspection

The Company was inspected or audited by the Inspectorate or its appointed consultants on a number of occasions during 2002. Where relevant, report summaries are available in the 'Business and Technical' section of the Inspectorate's web site under 'Audit and Inspection'.

Audit or Inspection	Date
Audit of regulatory <i>Cryptosporidium</i> monitoring sites	Various dates throughout the year
Audit of progress with regulatory programmes of work	March 2002
Review of the distribution system undertaking	July 2002
Inspection of two water treatment works and one service reservoir	June and September 2002
Unannounced inspection of laboratory analysing for <i>Cryptosporidium</i>	June 2002
Announced inspection of laboratory analysing for <i>Cryptosporidium</i>	August 2002
Audit of response to selected consumer complaints	September 2002
Audit trails of 15 test results	October 2002
Audit of sampling arrangements	November 2002

A number of recommendations were made in respect of action required to avoid the risk of a breach of a regulatory duty. These recommendations were in relation to the audit trails, the operation of treatment works and service reservoirs, the programmes of work and the distribution undertaking.

## Incidents

The Inspectorate regarded 10 of the events notified during 2002 by the Company as incidents. For further details on the classification of incidents, see chapter C "Events affecting Water Quality" in Part 3.

All of the incidents have been assessed by the Inspectorate. Each was of short duration and Yorkshire Water has taken appropriate remedial action. A number of recommendations were made regarding sampling and procedures.

During the 2002 reporting period, assessment was also completed for three incidents which occurred in 2001.

Nature of incident	No. of incidents	Assessment completed	Area affected	Population potentially affected
Supply of discoloured water	5	Yes	Harden and Cullingworth (March)	3,800
			Selby (April)	50,000
			Bradford Kirkgate (May)	3,000
			Golcar (June)	3,000
			Kendray (July)	72,000
Disinfection failure	1	Yes	Kepwick (September)	650
Failure of treatment process	2	Yes	Kirkhamgate (March)	0
			Boltby (September)	500
Microbiological contamination of supplies	2	Yes	Isle of Axholme (August)	13,000
			Wadsley, Sheffield (September)	100,000

## Formal Caution

In January 2003 the Company admitted supplying water unfit for human consumption to consumers in the Sandygates area of Sheffield in June 2001 as a result of deficiencies in planning one stage of a major mains refurbishment programme in the area. The Inspectorate considered that there was sufficient evidence to proceed with a prosecution. However the evidence suggested that the Company took rapid and effective action to address the problem and amended its working procedures following the incident to minimise the risk of a recurrence. A formal caution was therefore considered to be the most appropriate course of action. The caution will remain on the files. Further information can be found in chapter C 'Events affecting Water Quality' in Part 3.

## Enforcement Action

The table below indicates areas where, in 2002, the Inspectorate considered taking enforcement action for regulatory breaches, and where an undertaking was submitted or where the Company took appropriate action.

Parameter/Area	Regulation breached	Location	Outcome
Total coliforms	3(7)	Graincliffe WTW	Remedial action taken
Total coliforms	3(7)	Littleworth WTW	Remedial action taken
Trihalomethanes	3(3)(e)	Oughtershaw water supply zone	Undertaking submitted

## Undertakings and other Improvement Programmes

### Water treatment works and service reservoirs

Three undertakings were due for completion during 2002. These were to install treatment at Acomb Landing for pesticides, and in Halifax and Wakefield SAM supply zones for contraventions of the hydrogen ion standard. All the programmes were completed on schedule.

No other improvement programmes were due for completion in 2002.

### **Distribution**

The ongoing distribution system undertaking has been progressing satisfactorily. During 2002, 573.7 km of mains have been renovated. The Company is required to renovate a further 3,944.8 km of mains by March 2010. In addition, one undertaking to remove iron by flushing from the distribution system in York, was due for completion during 2002. This was completed on schedule.

### **Lead**

The Company has a Regulation 41 programme of work to meet the revised standard for lead set down in the new Water Supply (Water Quality) Regulations 2000, which will come into force on 25 December 2003. Progress with the delivery of the programme is monitored by the Inspectorate and has been satisfactory.