ANNEX I

For inland waters

	A	B	C	D	E
	Parameter	**Excellent quality**	**Good quality**	**Sufficient**	**Reference methods of analysis**
1	Intestinal enterococci (cfu/100 ml)	200[a]	400[a]	330[b]	ISO 7899-1 or ISO 7899-2
2	Escherichia coli (cfu/100 ml)	500[a]	1 000[a]	900[b]	ISO 9308-3 or ISO 9308-1

a Based upon a 95#percentile evaluation. See Annex II.

b Based upon a 90#percentile evaluation. See Annex II.

For coastal waters and transitional waters

	A	B	C	D	E
	Parameter	**Excellent quality**	**Good quality**	**Sufficient**	**Reference methods of analysis**
1	Intestinal enterococci (cfu/100 ml)	100[a]	200[a]	185[b]	ISO 7899-1 or ISO 7899-2
2	Escherichia coli (cfu/100 ml)	250[a]	500[a]	500[b]	ISO 9308-3 or ISO 9308-1

a Based upon a 95#percentile evaluation. See Annex II.

b Based upon a 90#percentile evaluation. See Annex II.

ANNEX II

Bathing water assessment and classification

1. Poor quality

Bathing waters are to be classified as ‘poor’ if, in the set of bathing water quality data for the last assessment period[(1)], the percentile values[(2)] for microbiological enumerations are worse[(3)] than the ‘sufficient’ values set out in Annex I, column D.

2. Sufficient quality

Bathing waters are to be classified as ‘sufficient’:

1. if, in the set of bathing water quality data for the last assessment period, the percentile values for microbiological enumerations are equal to or better[(4)] than the 'sufficient' values set out in Annex I, column D; and

2. if the bathing water is subject to short-term pollution, on condition that:

   (i) adequate management measures are being taken, including surveillance, early warning systems and monitoring, with a view to preventing bathers' exposure by means of a warning or, where necessary, a bathing prohibition;

   (ii) adequate management measures are being taken to prevent, reduce or eliminate the causes of pollution; and

   (iii) the number of samples disregarded in accordance with Article 3(6) because of short#term pollution during the last assessment period represented no more than 15 % of the total number of samples provided for in the monitoring calendars established for that period, or no more than one sample per bathing season, whichever is the greater.

3. Good quality

Bathing waters are to be classified as 'good':

1. if, in the set of bathing water quality data for the last assessment period, the percentile values for microbiological enumerations are equal to or better[(4)] than the 'good quality' values set out in Annex I, column C; and

2. if the bathing water is subject to short-term pollution, on condition that:

   (i) adequate management measures are being taken, including surveillance, early warning systems and monitoring, with a view to preventing bathers' exposure, by means of a warning or, where necessary, a bathing prohibition;

   (ii) adequate management measures are being taken to prevent, reduce or eliminate the causes of pollution; and

   (iii) the number of samples disregarded in accordance with Article 3(6) because of short#term pollution during the last assessment period represented no more than 15 % of the total number of samples provided for in the monitoring calendars established for that period, or no more than one sample per bathing season, whichever is the greater.

4. Excellent quality

Bathing waters are to be classified as 'excellent':

1. if, in the set of bathing water quality data for the last assessment period, the percentile values for microbiological enumerations are equal to or better than the 'excellent quality' values set out in Annex I, column B; and

2. if the bathing water is subject to short-term pollution, on condition that:

   (i) adequate management measures are being taken, including surveillance, early warning systems and monitoring, with a view to preventing bathers' exposure, by means of a warning or, where necessary, a bathing prohibition;

   (ii) adequate management measures are being taken to prevent, reduce or eliminate the causes of pollution; and

(iii) the number of samples disregarded in accordance with Article 3(6) because of short#term pollution during the last assessment period represented no more than 15 % of the total number of samples provided for in the monitoring calendars established for that period, or no more than one sample per bathing season, whichever is the greater.

NOTES

ANNEX III

The bathing water profile

1. The bathing water profile referred to in Article 6 is to consist of:

(a) a description of the physical, geographical and hydrological characteristics of the bathing water, and of other surface waters in the catchment area of the bathing water concerned, that could be a source of pollution, which are relevant to the purpose of this Directive and as provided for in Directive 2000/60/EC;

(b) an identification and assessment of causes of pollution that might affect bathing waters and impair bathers' health;

(c) an assessment of the potential for proliferation of cyanobacteria;

(d) an assessment of the potential for proliferation of macro-algae and/or phytoplankton;

(e) if the assessment under point (b) shows that there is a risk of short-term pollution, the following information:
- the anticipated nature, frequency and duration of expected short-term pollution,
- details of any remaining causes of pollution, including management measures taken and the time schedule for their elimination,
- management measures taken during short-term pollution and the identity and contact details of bodies responsible for taking such action,

(f) the location of the monitoring point.

2. In the case of bathing waters classified as ‘good’, ‘sufficient’ or ‘poor’, the bathing water profile is to be reviewed regularly to assess whether any of the aspects listed in paragraph 1 have changed. If necessary, it is to be updated. The frequency and scope of reviews is to be determined on the basis of the nature and severity of the pollution. However, they are to comply with at least the provisions and to take place with at least the frequency specified in the following table.

Bathing water classification	**‘Good’**	**‘Sufficient’**	**‘Poor’**
Reviews are to take place at least every	four years	three years	two years
Aspects to be reviewed (points of paragraph 1)	(a) to (f)	(a) to (f)	(a) to (f)

In the case of bathing waters previously classified as ‘excellent’, the bathing water profiles need be reviewed and, if necessary, updated only if the classification changes to ‘good’, ‘sufficient’ or ‘poor’. The review is to cover all aspects mentioned in paragraph 1.

3. In the event of significant construction works or significant changes in the infrastructure in or in the vicinity of the bathing water, the bathing water profile is to be updated before the start of the next bathing season.

4. The information referred to in paragraph 1(a) and (b) is to be provided on a detailed map whenever practicable.

5. Other relevant information may be attached or included if the competent authority considers it appropriate.

ANNEX IV

Bathing water monitoring

1. One sample is to be taken shortly before the start of each bathing season. Taking account of this extra sample and subject to paragraph 2, no fewer than four samples are to be taken and analysed per bathing season.

2. However, only three samples need be taken and analysed per bathing season in the case of a bathing water that either:

(a) has a bathing season not exceeding eight weeks; or

(b) is situated in a region subject to special geographical constraints.

3. Sampling dates are to be distributed throughout the bathing season, with the interval between sampling dates never exceeding one month.

4. In the event of short-term pollution, one additional sample is to be taken to confirm that the incident has ended. This sample is not to be part of the set of bathing water quality data. If necessary to replace a disregarded sample, an additional sample is to be taken seven days after the end of the short-term pollution.

ANNEX V

Rules on the handling of samples for microbiological analyses

1. Sampling point

Where possible, samples are to be taken 30 centimetres below the water's surface and in water that is at least one metre deep.

2. Sterilisation of sample bottles

Sample bottles are:

— to undergo sterilisation in an autoclave for at least 15 minutes at 121 ^{o}C, or

— to undergo dry sterilisation at between 160 ^{o}C and 170 ^{o}C for at least one hour, or

— to be irradiated sample containers obtained directly from manufacturer.

3. Sampling

The volume of the sampling bottle/container is to depend on the quantity of water needed for each parameter to be tested. The minimum content is generally 250 ml.

Sample containers are to be of transparent and non-coloured material (glass, polyethene or polypropylene).

In order to prevent accidental contamination of the sample, the sampler is to employ an aseptic technique to maintain the sterility of the sample bottles. There is no further need for sterile equipment (such as sterile surgical gloves or tongs or sample pole) if this is done properly.

The sample is to be clearly identified in indelible ink on the sample and on the sampling form.

4. Storage and transport of samples before analysis

Water samples are to be protected at all stages of transport from exposure to light, in particular direct sunlight.

The sample is to be conserved at a temperature of around 4 ^{o}C, in a cool box or refrigerator (depending on climate) until arrival at the laboratory. If the transport to the laboratory is likely to take more than four hours, then transport in a refrigerator is required.

The time between sampling and analysis is to be kept as short as possible. It is recommended that samples be analysed on the same working day. If this is not possible for practical reasons, then the samples shall be processed within no more than 24 hours. In the meantime, they shall be stored in the dark and at a temperature of 4 ^{o}C ± 3 ^{o}C.

(**1**) 'Last assessment period' means the last four bathing seasons or, when applicable, the period specified in Article 4(2) or (4).

(**2**) Based upon percentile evaluation of the $\log_{10}$ normal probability density function of microbiological data acquired from the particular bathing water, the percentile value is derived as follows:

(i) Take the $\log_{10}$ value of all bacterial enumerations in the data sequence to be evaluated. (If a zero value is obtained, take the $\log_{10}$ value of the minimum detection limit of the analytical method used instead.)

(ii) Calculate the arithmetic mean of the $\log_{10}$ values (μ).

(iii) Calculate the standard deviation of the $\log_{10}$ values (σ).

The upper 90#percentile point of the data probability density function is derived from the following equation: upper 90#percentile = antilog (μ + 1,282 σ).
The upper 95#percentile point of the data probability density function is derived from the following equation: upper 95#percentile = antilog (μ + 1,65 σ).

(**3**) 'Worse' means with higher concentration values expressed in cfu/100 ml.

(**4**) 'Better' means with lower concentration values expressed in cfu/100 ml.