

Bathing water results 2009 – Belgium

1. Introduction

This report gives a general overview of bathing water quality in Belgium during the 2009 bathing season.

Belgium reported 12 parameters under the Directive 76/160/EEC (1 Total coliforms, 2 Faecal coliforms, 3 Faecal streptococci, 4 Salmonella, 6 pH, 7 Colour, 8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices), 11 Transparency, 12 Dissolved oxygen, 13 Tarry residues and floating materials).

The parameters to be taken into account for assessment according to the assessment rules of the Directive 76/160/EEC are microbiological (1 Total coliforms, 2 Faecal coliforms) and physico-chemical (8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices)).

The bathing waters are classified in the following categories:

- Compliant with mandatory values of the Directive for the five parameters (class CI);
- Compliant with mandatory and more stringent guide values of the Directive for the five parameters (class CG);
- Not compliant with mandatory values of the Directive for the five parameters (class NC);
- Banned or closed (temporarily or throughout the season) (class B).

2. Length of bathing season and number of bathing waters

The bathing season lasted almost four months, from 18 or 19 May to 14 or 15 September 2009 in the Flemish region, for coastal bathing waters. The bathing season ran from 14 April to 7 or 8 September 2009 in the Flemish region (almost five months) and from 15 June to 15 September 2009 in the Walloon region (three months) for freshwater bathing waters.

A total of 126 bathing waters were monitored in Belgium during the 2009 bathing season, of which 42 were coastal bathing waters and 84 freshwater bathing waters (23 on rivers; 61 on lakes).

With 126 bathing waters Belgium accounts for about 0.6% of the reported bathing waters of the European Union.

The evolution of the reported number of bathing waters since monitoring of the water quality began under the Directive 76/160/EEC is presented in Table 1. There was a significant increase in number of freshwater bathing waters from 50 in 2001 to 84 in 2009, almost reaching the highest reported numbers in the period 1992-1995 (85, 85, 86, 87 respectively). In 2009, there were eight more freshwater bathing waters than in the previous year: 15 new bathing waters were added to the list and seven were de-listed. The number of coastal bathing waters remained stable. It started with 39 in 1990 and increased to 40 in 2005 and remained the same till 2008. In 2009, there were two more coastal bathing waters: five new bathing waters were added to the list and three were de-listed.

3. Results of bathing water quality

The results of the bathing water quality in Belgium for the period 1990-2008 as reported in the past reporting years and for the bathing season of 2009 are presented in Figure 1. The previous reports are available on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html; Water and Health/Bathing Water/2005-2009 reports) and the European Environment Agency's bathing water website (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>; reports for 2008 bathing season).

The graphs show, for coastal and freshwater bathing waters separately:

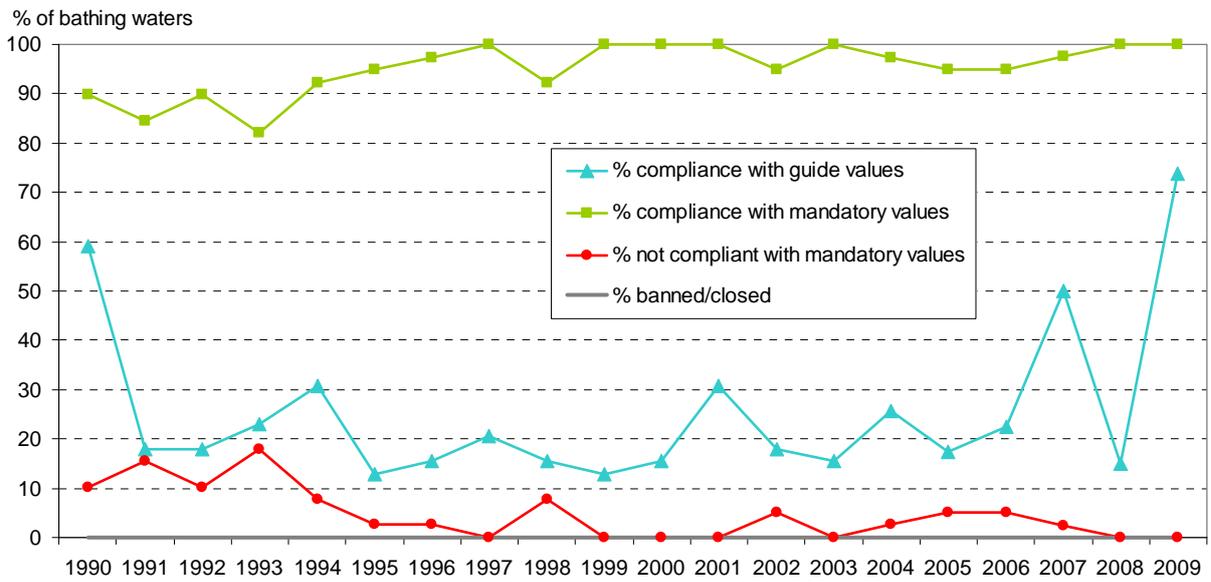
- The percentage of bathing waters that comply with the guide values (class CG, blue line);
- The percentage of bathing waters that comply with the mandatory values (class CI, green line);
- The percentage of bathing waters that do not comply with the mandatory values (class NC, red line);
- The percentage of bathing waters that are banned or closed (temporarily or throughout the season) (class B, grey line).

Table 1 shows the same information in absolute numbers and in percentages separately for coastal and freshwater bathing waters. Table 2 shows the bathing water quality results for the 2009 season in Belgium for all bathing waters.

Map 1 shows the locations of the reported bathing waters in Belgium. The location of the bathing waters is based on the geographic coordinates reported by the Belgian authorities.

Figure 1: Results of bathing water quality in Belgium from 1990 to 2009

Coastal bathing waters (BE)



Freshwater bathing waters (BE)

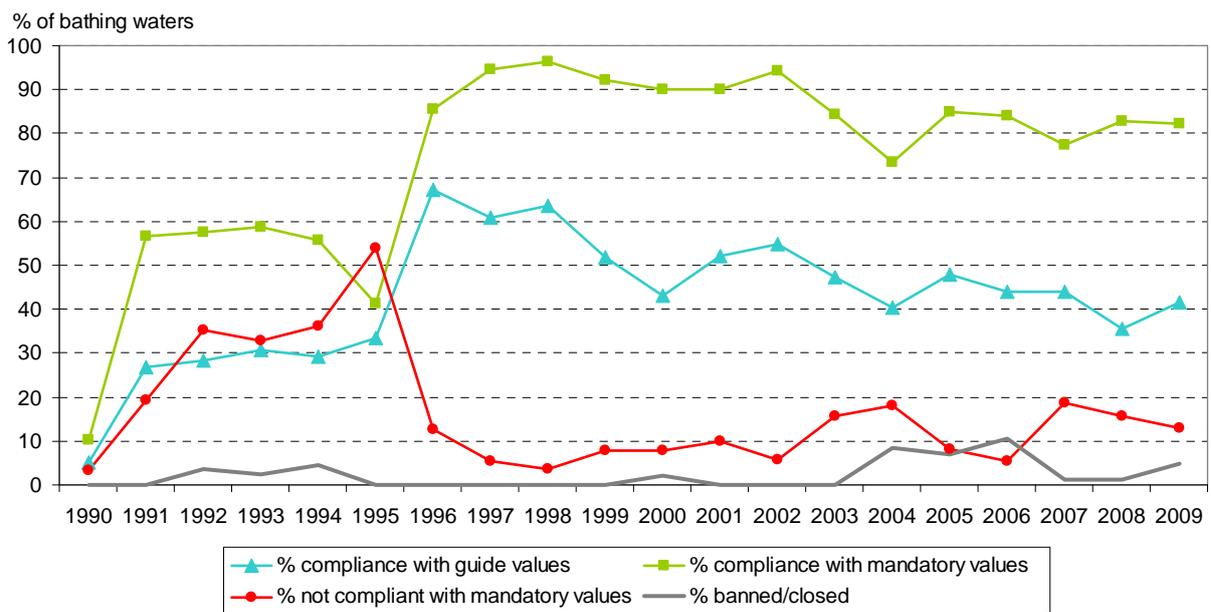


Table 1: Results of bathing water quality in Belgium from 1990 to 2009

BE										
		Total number of bathing waters	Compliance with guide values		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season	
			Number	%	Number	%	Number	%	Number	%
Coastal bathing waters	1990	39	23	59.0	35	89.7	4	10.3	0	0.0
	1991	39	7	17.9	33	84.6	6	15.4	0	0.0
	1992	39	7	17.9	35	89.7	4	10.3	0	0.0
	1993	39	9	23.1	32	82.1	7	17.9	0	0.0
	1994	39	12	30.8	36	92.3	3	7.7	0	0.0
	1995	39	5	12.8	37	94.9	1	2.6	0	0.0
	1996	39	6	15.4	38	97.4	1	2.6	0	0.0
	1997	39	8	20.5	39	100.0	0	0.0	0	0.0
	1998	39	6	15.4	36	92.3	3	7.7	0	0.0
	1999	39	5	12.8	39	100.0	0	0.0	0	0.0
	2000	39	6	15.4	39	100.0	0	0.0	0	0.0
	2001	39	12	30.8	39	100.0	0	0.0	0	0.0
	2002	39	7	17.9	37	94.9	2	5.1	0	0.0
	2003	39	6	15.4	39	100.0	0	0.0	0	0.0
	2004	39	10	25.6	38	97.4	1	2.6	0	0.0
	2005	40	7	17.5	38	95.0	2	5.0	0	0.0
	2006	40	9	22.5	38	95.0	2	5.0	0	0.0
	2007	40	20	50.0	39	97.5	1	2.5	0	0.0
	2008	40	6	15.0	40	100.0	0	0.0	0	0.0
2009	42	31	73.8	42	100.0	0	0.0	0	0.0	
Freshwater bathing waters	1990	58	3	5.2	6	10.3	2	3.4	0	0.0
	1991	67	18	26.9	38	56.7	13	19.4	0	0.0
	1992	85	24	28.2	49	57.6	30	35.3	3	3.5
	1993	85	26	30.6	50	58.8	28	32.9	2	2.4
	1994	86	25	29.1	48	55.8	31	36.0	4	4.7
	1995	87	29	33.3	36	41.4	47	54.0	0	0.0
	1996	55	37	67.3	47	85.5	7	12.7	0	0.0
	1997	56	34	60.7	53	94.6	3	5.4	0	0.0
	1998	55	35	63.6	53	96.4	2	3.6	0	0.0
	1999	52	27	51.9	48	92.3	4	7.7	0	0.0
	2000	51	22	43.1	46	90.2	4	7.8	1	2.0
	2001	50	26	52.0	45	90.0	5	10.0	0	0.0
	2002	53	29	54.7	50	94.3	3	5.7	0	0.0
	2003	70	33	47.1	59	84.3	11	15.7	0	0.0
	2004	72	29	40.3	53	73.6	13	18.1	6	8.3
	2005	73	35	47.9	62	84.9	6	8.2	5	6.8
	2006	75	33	44.0	63	84.0	4	5.3	8	10.7
	2007	75	33	44.0	58	77.3	14	18.7	1	1.3
	2008	76	27	35.5	63	82.9	12	15.8	1	1.3
2009	84	35	41.7	69	82.1	11	13.1	4	4.8	

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive were not included in this table. Therefore, in some cases, the sum of the different categories will not be equal to the total number of bathing waters. Bathing waters which were compliant with the guide values were also compliant with the mandatory values.

Table 2: Results of bathing water quality for all bathing waters in Belgium in 2009

BE										
		Total number of bathing waters	Compliance with guide values		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season	
			Number	%	Number	%	Number	%	Number	%
Bathing waters	2009	126	66	52.4	111	88.1	11	8.7	4	3.2

Note: Bathing waters which were compliant with the guide values were also compliant with the mandatory values.

4. Development of bathing water quality

Coastal bathing waters

In Belgium, 100% of the coastal bathing waters met the mandatory values in 2009, the same as in the previous year. The rate of compliance with the more stringent guide values increased significantly from 15% to 73.8%. Since the start of the reporting in 1990, no coastal bathing water had to be closed during the season.

In regard to the mandatory values, an overall bathing water quality was fairly stable (from 94.9% to 100%) since 1995 with a small drop in 1998. The percentage of bathing waters that met the more stringent guide values, however, fluctuated significantly since the start of the reporting in 1990 from 12.8% in 1995 and 1999 to 73.8% in 2009.

Freshwater bathing waters

The mandatory values were met for 82.1% of the freshwater bathing waters in 2009. This is a slight decrease of 0.8% compared to the previous year. The rate of compliance with the guide values increased from 35.5% to 41.7%. The number of non-compliant bathing waters with the mandatory values decreased from 12 (15.8%) to 11 bathing waters (13.1%). Four freshwater bathing waters (4.8%) were closed (banned) during the season in 2009 compared to one (1.3%) in 2008.

From 1990 on, measures were taken to improve the inland water quality of rivers and lakes to improve the overall water quality. From 1997 till 2002, the percentage of freshwater bathing waters that met the mandatory water quality reached more than 90%. Since 2003, when 17 and later more than 20 freshwater bathing waters have been reported than in 2002, both the compliance with the mandatory values and the more stringent guide values decreased. This decrease is reflected into an increase of the number of the bathing waters being closed throughout the season. In 2007 and 2008, only one bathing water was closed.

5. General information as provided by the Belgian authorities

Walloon region

Identification of bathing waters

In the Walloon region, 36 official bathing areas were monitored during the 2009 bathing season. The list of these areas was sent to the European Commission before the start of the bathing season. There were no changes compared to the list from the previous bathing season.

Information to public

Informing the public, the agencies promoting tourism and administrative institutions has largely been oriented towards encouraging the use of the website: <http://aquabact.environnement.wallonie.be>.

The website has been updated before the start of the 2009 bathing season in order to update the presentation of compliance of bathing areas and propose two forms of visualization:

- compliance of recent samples;
- annual compliance (with history).

The adaptation of the website has been envisioned in early 2010. This update will include the translation of a portion of the site in English, Dutch and German, as well as taking into account the parameters set out in Directive 2006/7/EC for the calculation of compliance.

At the beginning of the 2008 season, information boards have been placed for the swimmers in each bathing area. The content of the panels was written in four languages. They display the permission or prohibition of swimming, a general description of the bathing area, a map of the region, the link to the website of the management of bathing water in the Walloon region, the emergency numbers, the reasons for the possible prohibition of swimming, the reasons for a possible downgrading of the area, information on short-term pollution, information on the nature and duration of abnormal situations during such events.

Improvement of bathing water quality

During the year 2009, the Walloon Region has continued to implement a comprehensive wastewater treatment programme in the collective and individual area to improve and maintain the bacteriological quality of bathing water. The construction of four new wastewater treatment plants were planned in area upstream of bathing during the year 2009 and the completion of four collecting drains. All areas of sewage systems located upstream of bathing areas (protected areas) have been identified as priorities.

Since the 2006 season, nearly 100% of the campsites have been equipped with treatment of their wastewater. The establishment of bathing water profiles in 2010 will update comprehensive information about it.

In 2009, the Walloon Region has continued its communication with farmers about the need to fence off riverbanks in meadows (use in more sustainable way) in the upstream protection area of bathing. Furthermore, the Walloon Region is actively involved in a national project aimed at developing techniques for analyzing toxins in cyanobacteria and validation of predictive models (statistical and deterministic) of development of algal blooms (BBLOOMS2 project).

Prohibited bathing areas, non-compliant bathing areas and bathing areas affected by short term pollution and excessive rain

The bathing areas Coo (524300020000000F18) in Stavelot, Hotton (526300003000000H35), Belvaux (527100011000000I20) in Rochefort and Noiseux (527100012000000I13) in Somme-Leuze were closed for bathing for the entire bathing season. They were classified as poor for five consecutive years. The prohibition or advice against bathing refers to Article R. 115, Water Code including warning the public by a simple and clear signal to the information point near the bathing site.

In 2009, 15 bathing areas failed to meet mandatory standards of the Directive 76/160/EEC. These areas have been declared as non-compliant.

There has been a short term pollution monitored on bathing area Falemprise (527300001000000I01). One sample had faecal coliforms 2700 cfu per 100 ml. A sample survey in the following week had 150 cfu per 100 ml. The cause may be revealed during the update of bathing water profiles.

Since 2008, the Administration has toughened its method of selecting samples to exclude exceptional rain. It now uses the Royal Meteorological Institute of Belgium (MRI) to determine the exceptional rains in upstream areas of bathing during the 2009 bathing season. Following this study, no sample was rejected because of the rainy season.

Monitoring of cyanobacteria

The visual observation of the importance of algal blooms is done in conjunction with water sampling. When the bloom covers more than half of the area, the collection (sampling) of water is executed and identification of families of algae is achieved. If the presence of cyanobacteria is confirmed, the sample

is analyzed to identify the species present and the dosage of any toxins. This procedure is not standardized yet and probably will be amended following the conclusions of the project BBLOOMS2.

Lake Chérapont (526200007000000H06) was tested positive at least for cyanobacteria, as well as the bathing area Cerfontaine Ry Jaune (527300001000000I02), bathing area of Féronval (523600006000000E01), bathing area of Renipont (522400022000000B04) and bathing area of Bambois (527200005000000I04).

Analytical Methods

The total coliforms and faecal coliforms were analyzed by the method of membrane filtration ISO 9308-1. For *Escherichia coli*, the microplate method ISO 9308-3 is applicable. Mineral oils, surface active substances and phenols are the subject of a field observation followed by laboratory analysis, if necessary.

Flemish Region

Bathing waters in the Flemish Region in 2009 have been designated by Ministerial Decree of April 1, 2009. There are 42 bathing waters on the coast and 48 on freshwater areas that are monitored. The bathing season on the coast is opened from 1 June to 15 September. On the inland, it starts on 1 May. During this period, the average number of samples of each bathing water on the coast is 27, but 21.1 on the inland. It is much higher than the required semi-monthly frequency. The sampling was conducted by the Flemish Environment Agency (VMM) and Flemish Agency for Care and Health.

In the 2009 bathing season, all bathing waters in the Flemish Region met the mandatory standards for total coliforms and faecal coliform bacteria. As in previous years, the physico-chemical parameters (mineral oils, surface active substances and phenols) never caused any problems.

De-listing of bathing waters

In 2009, three coastal bathing waters and seven freshwater bathing waters were de-listed in the Flemish Region.

Under the New Bathing Water Directive, the Flemish Region held a public inquiry from 19 November to 19 December 2008 in regard to the list of bathing waters. The public inquiry was used to test points to move to more appropriate coastal bathing areas in order to better protect the bather. Also, the names of the bathing areas have changed to the currently used name. The quality of de-listed bathing waters (Knokke-Heist Albertstrand, Knokke Centrum, Oostduinkerke "Twenty One") is further monitored by measuring of nearby bathing waters which quality meets the standards.

A review of the definition of bathing water was made. This revealed that certain freshwater bathing waters did not meet the requirements of the definition of bathing water. There was a ban (no bathing) at five bathing waters (Boerenkreek - Sint-Laureins, Herenlaak (Maas) - Maaseik, Domein Heuvelsven - Dilsem-Stokkem, Donkmeer II - Berlare, Wachtebeke - Provinciaal Domein Puyenbroeck). Bathing water Lac Loppem - Zedelgem was closed since 2005. Bathing water Kasterlee - Ark Van Noë was de-listed on the request of the operator.

For another freshwater bathing water (Nazareth - Robert Orlentvijver) only the Numlnd (access key) has changed.

Information to public

For the VMM and the Health Surveillance Division of the Flemish Agency for Care and Health (the former Flemish Health Inspectorate), it is important that the public is being informed about the bathing water quality. On the coast, the quality is quoted on information board near the miradors. The bathing water quality is represented by means of coloured smiling, sad and neutral faces. Such a system allows also children to understand in an easy way what the quality of the coastal bathing water is. The measurement results are continually available at website www.kwaliteitzwemwater.be for all interested people and the press. The VMM gives the managers of permitted freshwater recreation lakes an information pole. On this pole, the most recent measurement results are posted. On the beach, leaflets

in several languages are also distributed to inform bathers about bathing water quality and explain where to find the most recent analytical results.

Wastewater treatment

Due to strong efforts in the past, the most important municipal treatment infrastructure along the coast has been fully realized. In the coming years, a limited number of smaller projects will be implemented on the coastal area with positive impact on the quality of bathing water. It concerns the construction of separate sewage systems, renovation and optimization projects of operation of waste water collection and treatment systems, decoupling projects (uncoupling of surface and rainwater, uncoupling of collectors).

The reports by the Belgian authorities in regard to bathing water quality in Belgium for 2009 bathing season (in French and Dutch) can be obtained from

http://cdr.eionet.europa.eu/be/eu/bathing/envsyuemw/Rapport_baignade_2009_COMM.doc and http://cdr.eionet.europa.eu/be/eu/bathing/envsziqgg/sup_doc_rapportering_comm_2009.doc.

6. More information on bathing water quality in the European Union

More information on bathing water quality in the European Member States, including the EU summary report, the reports for 27 Member States, Croatia and Switzerland, can be found on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html) and the European Environment Agency's bathing water website (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>). The reports for the bathing seasons of 2008 and 2009 have been produced by the Institute for Water of the Republic of Slovenia (IWRS), a partner in the EEA European Topic Centre on Water (ETC/W). Countries have collaborated in the assessment of bathing water quality and supplied additional information when needed.

By 2015, Member States will have to comply with the stricter and more ambitious requirements laid out in the New Bathing Water Directive (Directive 2006/7/EC). This Directive requires more effective monitoring and management of bathing waters, greater public participation and improved information. More information on the new Directive can be found on the bathing water quality website and on <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>.

Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report according to more stringent new requirements in 2008 bathing season. Malta and the Netherlands started to report in 2009 bathing season under the new requirements. Sweden and Malta also sent data for three previous bathing seasons under the new requirements. Luxembourg started to monitor under the new requirements in 2006 bathing season, while reported for the first time in 2007 bathing season.

WISE - Water Information System for Europe (www.water.europa.eu) is a gateway to all water related information. Among other water related data, information on individual bathing water quality can be found in the WISE map viewer and WISE Bathing Water Quality data viewer through interactive maps and graphs (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>).

Map 1: Bathing waters reported during the 2009 bathing season in Belgium

