Cyfoeth Naturiol Cymru
Natural Resources Wales

Bathing Waters in Wales 2015

Saundersfoot Beach

Contents

Crynodeb Gweithredol

Mae dyfroedd ymdrochi o ansawdd da yn bwysig iawn ar gyfer cymunedau arfordirol, ymwelwyr a'r economi yng Nghymru. Yn 2015, roedd yn rhaid i'r holl ddyfroedd ymdrochi dynodedig yng Nghymru gwrdd â safonau llymach a bennwyd gan y Gyfarwyddeb Dŵr Ymdrochi diwygiedig. O'r 102 o ddyfroedd ymdrochi a aseswyd, yng Nghymru, roedd 82 o safon ardderchog, cyflawnodd 16 o ddyfroedd ymdrochi safon dda a chyflawnodd 4 safon ddigonol. Ni ystyriwyd unrhyw ddŵr ymdrochi i fod yn wael yng Nghymru.

Mae'r canlyniadau hyn yn gyflawniad sylweddol, gyda thri Dwfr Ymdrochi arall yn rhagorol i gymharu gyda'r canlyniadau a ragwelwyd yn 2014. Mae hyn yn adlewyrchu'r camau a gymerwyd gan Cyfoeth Naturiol Cymru, ynghyd â Dŵr Cymru, Awdurdodau Lleol, sefydliadau ffermio a thirfeddianwyr i wella ansawdd dŵr. Fe wnaed gwelliannau yn lleol, fel gwella carthffosiaeth a gollyngfeydd; ac yn fwy cyffredinol, megis lleihau llygredd dŵr gwasgaredig o dir fferm yn y cefn gwlad ehangach.

Mae'r Gyfarwyddeb Dŵr Ymdrochi ddiwygiedig yn cyflwyno system dosbarthu newydd gyda safonau ansawdd dŵr llymach ac yn rhoi pwyslais ar ddarparu gwybodaeth i'r cyhoedd. Rhaid i Aelod-wladwriaethau roi gwybod i'r cyhoedd am reoli dyfroedd ymdrochi, ansawdd dyfroedd ymdrochi ac iechyd y cyhoedd. Mae safonau ansawdd dŵr ar gyfer y dosbarthiadau newydd yn llawer uwch na'r rhai'r Gyfarwyddeb Dŵr Ymdrochi gwreiddiol. Fe ddosberthir dyfroedd ar samplau a gymerwyd am y pedair blynedd flaenorol er mwyn cydbwyso effeithiau sefyllfaoedd eithafol.

Cyfoeth Naturiol Cymru sy'n gyfrifol am fonitro a chymharu'r canlyniadau gyda safonau'r Gyfarwyddeb ddiwygiedig. Fe archwilir y samplau am ddau fath o facteria, sy'n dangos llygredd o garthion neu dda byw. Gall dŵr llygredig effeithio ar iechyd dynol, gan achosi poen stumog a dolur rhydd os caiff ei lyncu.

Cyflwynir canlyniadau'r gwaith monitro dyfroedd ymdrochi 2015 yn yr adroddiad hwn. Mae'n trafod sefyllfaoedd mewn dyfroedd ymdrochi unigol oedd yn effeithio ar ansawdd dŵr a'r camau gellid cael eu gwneud er mwyn eu gwella. Ein sialens yw diogelu a gwella ein hadnoddau naturiol ac felly cynnal y safonau uchel a gyflawnwyd yn ein dyfroedd ymdrochi eleni.

Executive Summary

Good quality bathing waters are very important for coastal communities, visitors and the economy in Wales. In 2015, all of the designated Welsh bathing waters met the tougher standards set by the revised Bathing Water Directive. Of the 102 bathing waters assessed, in Wales, 82 were of an excellent standard, 16 bathing waters achieved a good standard and 4 achieved sufficient standard. No Welsh bathing water was classed as poor.

These results are a significant achievement, with three more Bathing Waters achieving excellent compared with the projected results in 2014. This reflect actions taken by Natural Resources Wales, together with Dŵr Cymru, Local Authorities, farming organisations and landowners to improve water quality. Improvements have been made locally, such as sewerage and outfall improvements; and more broadly, such as reducing diffuse water pollution from farmland in the wider countryside.

The revised Bathing Water Directive introduces a new classification system with more stringent water quality standards and puts an emphasis on providing information to the public. Member States have to inform members of the public about bathing water management, bathing water quality, and potential threats to bathing water quality and public health. The water quality standards for the new classifications are much higher than those of the original Bathing Water Directive. Waters are also classified based on samples taken from the previous four years in order to even out effects of extreme situations.

Natural Resources Wales is responsible for monitoring and reporting against the standards in the revised Directive. Samples are analysed for two types of bacteria, which indicate pollution from sewage or livestock. Polluted water can have impacts on human health, causing stomach upsets and diarrhoea if swallowed.

This report presents the results of the 2015 bathing water monitoring. It discusses situations at individual bathing waters which had an impact on water quality and the improvement actions that can be taken. Our challenge is to protect and enhance our natural resources and so maintain the high standards achieved this year at our bathing waters.

Porth Dafarch

1. Bathing waters in Wales

Wales' bathing waters are of great importance for the economy, for local communities and for tourism. A study commissioned by WWF Cymru in 2012, 'Valuing Wales' seas and coasts' stated that "The coastal and marine environment is an incredible natural asset, contributing £6.8 billion to the economy of Wales and supporting more than 92,000 jobs. Over 60 percentpercent of the population of Wales live and work in the coastal zone, with all our major cities and many important towns located on the coast. The stunning and varied coastline around Wales also helps to explain the importance of the tourism industry, which contributes over £700 million each year to the Welsh economy"[1]. Several of Wales' beaches such as Barafundle and Tenby, are regularly voted Britain's best. Swimming, surfing, angling and rockpooling are popular activities all around the coastline. When the Wales Coastal Path opened in 2012, Lonely Planet named Wales' coastline the top region to visit in the world[2].

The competitiveness of the Welsh tourism industry is dependent on the quality of tourist destinations, including the quality of bathing water. In 2015 all bathing waters in Wales were of high quality, meeting minimum water quality standards specified in the EU's revised Bathing Water Directive.

European water policy has played an important role in protecting water resources, and the quality of Welsh bathing sites is a good example of this. The first European bathing water legislation, in the form of the Bathing Water Directive[3], came into force in 1976. The revised Bathing Water Directive was adopted in 2006[4], and 2015 is the first year it has been fully implemented in the UK. Management and surveillance methods for bathing waters have been changed and new tighter microbiological standards brought in. More detail on the differences between the original and revised Bathing Water Directives can be found in the Bathing Waters Report 2014[5].

Provision of information to the public is a key part of the revised directive. Profiles have to be prepared and published for all bathing waters[6] and made freely available. These profiles describe the physical and hydrological conditions of bathing areas and analyse potential impacts on (and potential threats to) their water quality. The bathing water profiles are both a source of information for citizens and a management tool.

In Wales, Natural Resources Wales is responsible for monitoring bathing waters and communicating the results to the public. All information, including the profiles is communicated to the public via the Bathing Water Data Explorer[7].

The bathing season begins in May and lasts until the end of September. During the bathing season, Natural Resources Wales monitors bathing water quality and provides information about possible health risks arising from issues such as short-term pollution episodes. At the end of each year, Natural Resources Wales sends data on bathing water quality and information on management measures to the European Commission (EC) and the European Environment Agency (EEA).

[1] WWF Cymru 2012. Valuing Wales' seas and coasts. http://assets.wwf.org.uk/downloads/marine_survey_report_final.pdf.
[2] Visit Wales 2015. Wales coastline and beaches guide. http://www.visitwales.com/explore/coastline-beaches
[3] Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water.
[4] Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC.
[5] Natural Resources Wales 2014. Bathing Waters Report 2014.
[6] A bathing water profile can cover a single site or more contiguous bathing water sites.
[7] Natural Resources Wales http://environment.data.gov.uk/wales/bathing-waters/profiles/

2. Bathing water quality in 2015

102 designated bathing waters in Wales were sampled and classified during the 2015 bathing season. All designated bathing waters met the minimum water quality standards; 82 achieved the highest classification of excellent, 16 achieved good and 4 achieved sufficient (Fig 1a). These results show an improvement in overall water quality compared with the projected classifications produced at the end of the 2014 season (Fig 1b).

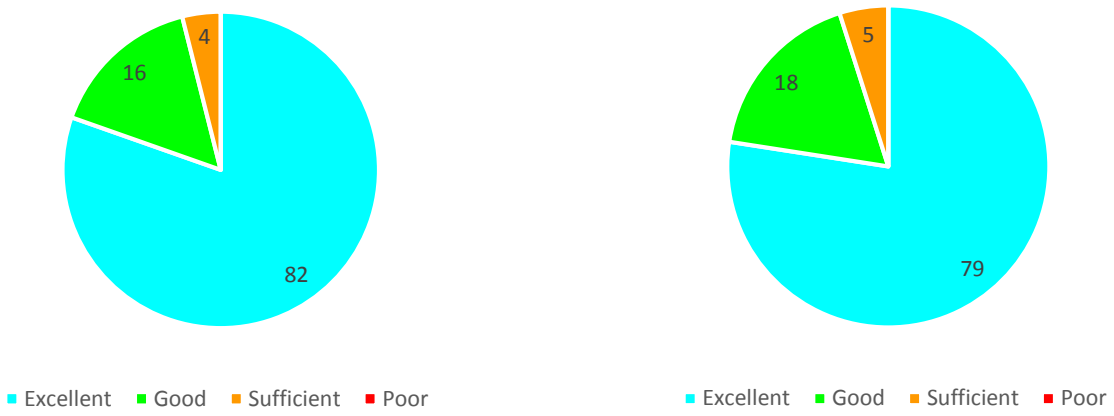

Figure 1. Classifications of Bathing Waters in Wales (a) in 2015 and (b) projected in 2014.

The revised Bathing Water Directive classifications in 2015 are based on two microbiological parameters: *Escherichia coli* (*E. coli*) and intestinal enterococci. They are calculated from four years of sample data (2012-2015). 2015 is the first year that the revised Bathing Water Directive classifications have been formally reported, and the first year a full dataset is available (four years of sample data for the new parameters). In 2014 projected classifications were produced based on sample data from 2011-2014. The same parameters were used in the 2012-2014 data, but surrogate data had to be used for 2011 as different parameters had been monitored. Faecal coliforms data replaces the *E. coli* parameter and faecal streptococci replaces the intestinal enterococci parameter. As these measurements are all intended to assess the status of water quality in relation to human health, the 2015 classifications show a valid improvement against the 2014 projected classification.

For details of the location of the Bathing Waters across Wales see Figure 2 and for details of the results of the analysis and classifications see Annex I.

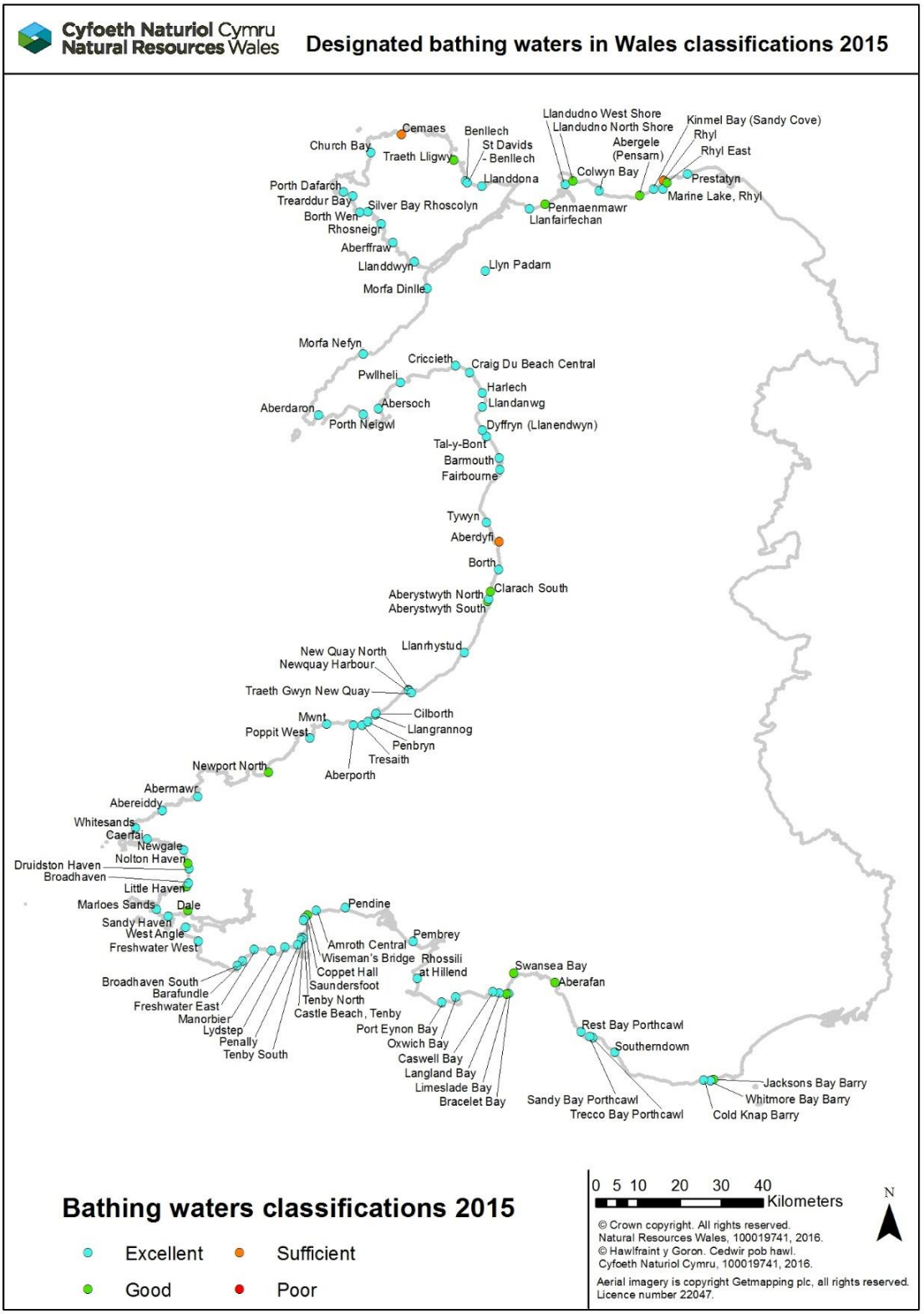

Figure 2. Location and classification of designated bathing waters in Wales 2015

3. Monitoring and classification in 2015

3.1 Monitoring

In Wales the bathing season runs from 15th May to 30th September each year. Monitoring begins from 1st May as each bathing water has one pre-season sample taken. There may also be a pre-season inspection to identify any issues. Throughout the bathing season, Natural Resources Wales collects water samples at designated bathing sites. The samples are analysed for two types of bacteria, *Escherichia coli* (*E. coli*) and intestinal enterococci.

Bathing water sampler at Marloes Sands

Samples are taken according to a monitoring calendar set out in advance of the season. Each sample must be taken on the specified date or up to four days afterwards or the sampling opportunity is lost because samples taken outside that five day window do not count for the compliance dataset. This calendar can be suspended if abnormal situations occur which could affect bathing water quality.

Abnormal situations

There were nine Abnormal Situations during the 2015 season, details are in Annex II.

The following situations were quickly resolved and there was no impact on water quality:

- Freshwater East was affected by excavation works
- Cemaes was affected by potential contamination from sewage
- Clarach South was affected by outfall clearance.

Abergele, Kinmel Bay (Sandy Cove), Marine Lake (Rhyl), Prestatyn, Rhyl and Rhyl East were all affected by potential sewage contamination following a break in a sewage pipe. This caused some samples to be postponed.

The bathing season at Swansea Bay was closed two weeks early, due to sewer alteration work. This was not an abnormal situation, no samples were taken in this period and signs were put up advising people not to swim at the beach. The early closure did not affect classification as sufficient samples had already been taken during the season.

3.2 Classification

Sampling for the revised Bathing Water Directive began in 2012 and since classifications are now based on four years of data, 2015 is the first year that the new classifications are used for calculating and reporting. New or recently designated bathing waters may be classified on less than four years data, but with a minimum number of 16 samples. The Directive standards use two microbiological parameters - *E. coli* and intestinal enterococci – and are based on 95th and 90th percentile values (Annex III).

Samples are classified according to four categories: excellent, good, sufficient and poor. An objective is set in the Directive for all bathing waters to achieve Sufficient status by 2015. The classifications will also be used in the periodic reviews of the profiles required by the Directive: every two years for poor bathing waters, every three years for sufficient and every four years for good.

Short-term pollution, prediction and discounting

At some bathing waters short-term pollution may be predicted by models. Beach operators then update a sign at the bathing water stating whether good or poor water quality is predicted that day. The prediction information is also shared online. If the model has predicted poor quality, the public have been informed and a confirmation sample is taken to show if that pollution lasted less than 72 hours, then a scheduled bathing water sample taken that day may be discounted from the four year dataset. This is possible up to a maximum of 15 percentpercent 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. Bathing waters where short-term pollution has been predicted during the season can only be classified as sufficient, good or excellent quality if adequate management measures are being taken.

At the end of the 2015 season Welsh Government decided to discount two samples from Rhyl and Rhyl East and one sample from Swansea Bay which met all the criteria. This resulted in Rhyl being classified as sufficient (classified as sufficient without discounting), Rhyl East as good (classified as good without discounting) and Swansea Bay as good (classified as sufficient without discounting).

Step change

Major changes at bathing waters such as sewerage improvements may mean that data from before the changes are no longer representative of the current bathing water quality. Data from before such changes can be excluded from classification calculations under a provision commonly known as step change.

In 2015, Natural Resources Wales chose to apply a step change at Cemaes due to the significant investment by Dŵr Cymru at Llanfechell sewage treatment works. This sewage works discharges into the Afon Wygyr upstream of Cemaes designated European bathing

water. The discharge contributed significantly to the bacterial levels in the Afon Wygyr and the bathing water. In order to improve bathing water quality at Cemaes, Dŵr Cymru have invested £800,000 at Llanfechell sewage works over the last couple of years. The works were completed by the end of March 2015, before the start of the 2015 season. Work involved the installation of ultra-violet light banks to kill bacteria in the effluent, plus improvements to the storm water storage facilities and replacement of storm pumps with variable speed pumps.

Bacterial samples taken by Natural Resources Wales have shown that the ultra-violet disinfection system has made a big difference in the bacterial concentration in the final effluent from the sewage works. As such the evidence shows that the water quality before the improvements did not represent the current situation and therefore a step change has been applied with regards Cemaes designated bathing water. This means that for Cemaes bathing waters the classifications have been derived from one year of sampling data (2015) instead of the usual four years. The application of the step change at Cemaes bathing water resulted in a classification of sufficient for 2015 which is the same as the projected classification following the 2014 bathing season.

Welsh Government chose to apply step change to four bathing waters in Wales after the 2012 season: Criccieth, Llandudno West, Rhyl and Prestatyn. All had major sewerage infrastructure works between the 2012 and 2013 seasons such as the construction of new storm tanks and all showed evidence that the water quality before the improvements did not represent the current situation. This means that for those four bathing waters their classifications are calculated using only three years of sampling data (2013-2015) instead of the usual four years.

4. Case study: Swansea Bay

Swansea Bay has seen substantial improvements in bathing water quality over recent years due to concerted efforts to address sources of pollution. The largest scale improvement was the construction of an £85 million tertiary treatment sewage works in the late 1990s. However, even after this there were still various sources of pollution including sewer overflows, misconnections, urban runoff and diffuse pollution from agriculture in the Clyne and Tawe catchments.

To tackle these sources of pollution, the Swansea Bay Bathing Water Group was established in 2009 with Environment Agency Wales, City and County of Swansea and Dŵr Cymru as key partners. The group worked with stakeholders to raise the profile of Swansea Bay as a bathing water and to promote better water and beach management. This led to improvements including maintenance of the sewerage network and a better understanding of the issue of misconnections.

Natural Resources Wales officers working with Swansea Misconnection Project Drainage officers

Alongside this the Smart Coasts Sustainable Communities project ran from 2010-2012 and carried out research to determine the relative impacts of the multiple pollution sources that impact on water quality in Swansea Bay to prioritise the work that could be done. The project also developed a model to predict bathing water quality/bathing risk at Swansea Bay.

These initiatives have contributed to positive improvements in the water quality at Swansea Bay which was projected to be sufficient in 2014 based on 2011-2014 data and improved to good status in 2015, based on 2012-2015 data. Future work at Swansea Bay will include taking part in discussions about potential implications for bathing water quality of the proposed tidal lagoon.

Annex I: Results of 2015 sampling and analysis of water quality at designated bathing water sites in Wales against the revised Bathing Water Directive.

Bathing water	No. samples 2012-2015		95th percentile*		90th percentile*		Classification	
	E. coli	IE	*E. coli*	IE	E.coli	IE	2015	2014 projected
			Colony forming units (cfu)100ml					
Aberdaron	76	76	136.76	70.38	86.92	49.93	EXCELLENT	EXCELLENT
Abereiddy	76	76	17.59	23.97	15.8	20.29	EXCELLENT	EXCELLENT
Aberffraw	76	76	82.02	36.06	56.82	28.49	EXCELLENT	EXCELLENT
Abermawr	76	76	26.87	19.51	22.37	17.21	EXCELLENT	EXCELLENT
Aberporth	76	76	136.23	96.95	86.95	65.67	EXCELLENT	EXCELLENT
Abersoch	76	76	30.29	37.76	24.66	29.61	EXCELLENT	EXCELLENT
Aberystwyth North	76	76	159.03	68.44	107.33	51.38	EXCELLENT	EXCELLENT
Amroth Central	76	76	138.48	61.33	91.15	44.3	EXCELLENT	EXCELLENT
Barafundle	76	76	18.81	14.74	16.78	13.66	EXCELLENT	EXCELLENT
Barmouth	76	76	78.34	25.99	56.1	21.86	EXCELLENT	EXCELLENT
Benllech	76	76	79.99	53.08	57.35	40.08	EXCELLENT	EXCELLENT
Borth	76	76	169.08	71.87	104.23	50.37	EXCELLENT	EXCELLENT
Borth Wen	76	76	71.18	59.49	50.3	42.89	EXCELLENT	EXCELLENT
Bracelet Bay	76	76	30.18	20.34	24.53	17.79	EXCELLENT	EXCELLENT
Broad Haven (Central)	75	75	117.29	96.05	76.1	64.32	EXCELLENT	EXCELLENT
Broad Haven (South)	76	76	21.89	26.92	18.78	22.14	EXCELLENT	EXCELLENT
Caerfai	72	72	41.24	26.29	32.53	22.14	EXCELLENT	EXCELLENT
Castle Beach, Tenby	76	76	71.19	72.09	51.68	51.9	EXCELLENT	EXCELLENT
Caswell Bay	76	76	69.66	63.63	48.92	45.23	EXCELLENT	EXCELLENT
Church Bay	76	76	47.55	23.85	35.81	20.13	EXCELLENT	EXCELLENT
Cilborth	76	76	69.35	45.07	50.34	34.78	EXCELLENT	EXCELLENT
Cold Knap Barry	75	75	102.81	54.68	70.97	40.83	EXCELLENT	EXCELLENT
Colwyn Bay	76	76	136.29	53.23	91.06	40.88	EXCELLENT	EXCELLENT
Coppet Hall	76	76	97.13	54.35	67.18	40.65	EXCELLENT	EXCELLENT
Craig Du Beach Central	76	76	97.57	39.81	67.44	30.98	EXCELLENT	EXCELLENT
Criccieth	56	56	108.1	58.77	73.4	43.42	EXCELLENT	EXCELLENT
Dale	75	75	79.68	55.15	55.95	41.02	EXCELLENT	EXCELLENT
Druidston Haven	75	75	56.35	39.61	41.86	31.05	EXCELLENT	EXCELLENT
Dyffryn (Llanendwyn)	76	76	65.03	22.63	47.68	19.65	EXCELLENT	EXCELLENT
Fairbourne	76	76	124.42	38.62	82.34	30.47	EXCELLENT	EXCELLENT
Freshwater East	76	76	57.41	42.39	41.77	32.46	EXCELLENT	EXCELLENT
Freshwater West	75	75	33.7	21.65	26.92	18.6	EXCELLENT	EXCELLENT
Harlech	76	76	78.73	17.39	56.05	15.73	EXCELLENT	EXCELLENT

Bathing water	No. samples 2012-2015		95th percentile*		90th percentile*		Classification	
	E. coli	IE	*E. coli*	IE	E.coli	IE	2015	2014 projected
			Colony forming units (cfu)100ml					
Kinmel Bay (Sandy Cove)	76	76	210.26	97.82	137.53	69.54	EXCELLENT	EXCELLENT
Langland Bay	76	76	43.3	36.59	33.42	28.76	EXCELLENT	EXCELLENT
Llandanwg	76	76	182.77	50.61	115.9	38.15	EXCELLENT	EXCELLENT
Llanddona	76	76	77.83	36.98	56.6	29.37	EXCELLENT	EXCELLENT
Llanddwyn	76	76	24.32	19.02	20.66	16.79	EXCELLENT	EXCELLENT
Llandudno West Shore	56	56	69.04	72.3	51.03	52.37	EXCELLENT	EXCELLENT
Llanfairfechan	76	76	210.15	80.6	130.48	57.16	EXCELLENT	EXCELLENT
Llangrannog	76	76	165.73	84.74	108.09	60.5	EXCELLENT	EXCELLENT
Llanrhystud	76	76	121.97	47.75	82.65	36.99	EXCELLENT	EXCELLENT
Llyn Padarn	36	36	77.43	30.77	56.4	25.08	EXCELLENT	EXCELLENT
Lydstep	76	76	21.49	28.76	18.63	23.44	EXCELLENT	EXCELLENT
Manorbier	76	76	35.15	18.61	28.02	16.55	EXCELLENT	EXCELLENT
Marine Lake, Rhyl	76	76	46.51	68.24	35.83	49.79	EXCELLENT	EXCELLENT
Marloes Sands	75	75	18.2	14.15	16.22	13.22	EXCELLENT	EXCELLENT
Morfa Dinlle	76	76	65.1	42	45.84	32.21	EXCELLENT	EXCELLENT
Morfa Nefyn	76	76	106.64	85.35	70.66	58.68	EXCELLENT	GOOD
Mwnt	76	76	65.57	32.49	48.44	26.38	EXCELLENT	EXCELLENT
New Quay Harbour	76	76	64.9	61.37	47.06	45.15	EXCELLENT	EXCELLENT
Newgale	76	76	31.84	34.47	25.66	27.35	EXCELLENT	EXCELLENT
Oxwich Bay	76	76	53.02	26.71	39.1	22	EXCELLENT	EXCELLENT
Pembrey	76	76	68.19	21.91	49.26	18.82	EXCELLENT	EXCELLENT
Penally	76	76	57.67	55.62	43.31	41.67	EXCELLENT	EXCELLENT
Penbryn	76	76	85.11	37.59	59.18	29.6	EXCELLENT	EXCELLENT
Pendine	76	76	140.82	45.21	94.08	34.87	EXCELLENT	EXCELLENT
Poppit West	76	76	247.62	71.97	145.72	51	EXCELLENT	GOOD
Port Eynon Bay	76	76	52.35	39.58	39.05	30.8	EXCELLENT	EXCELLENT
Porth Dafarch	76	76	111.76	87.17	74.71	59.54	EXCELLENT	EXCELLENT
Porth Neigwl	76	76	32.51	20.83	25.97	18.1	EXCELLENT	EXCELLENT
Prestatyn	56	56	133.28	83.02	90.51	59.41	EXCELLENT	EXCELLENT
Pwllheli	76	76	23	13.11	19.58	12.42	EXCELLENT	EXCELLENT
Rest Bay Porthcawl	76	76	43.87	19.47	33.95	17.21	EXCELLENT	EXCELLENT
Rhosneigr	76	76	24.18	15.71	20.49	14.37	EXCELLENT	EXCELLENT
Rhossili	76	76	85.62	19.43	59.19	17.07	EXCELLENT	EXCELLENT
Sandy Bay Porthcawl	76	76	86.72	42.42	60.21	32.81	EXCELLENT	EXCELLENT
Saundersfoot	76	76	80.57	51.43	57.19	39.06	EXCELLENT	EXCELLENT
Silver Bay Rhoscolyn	76	76	61.42	34.05	43.61	26.77	EXCELLENT	EXCELLENT
Southerndown	76	76	122.88	70.89	82.49	50.77	EXCELLENT	EXCELLENT

Bathing water	No. samples 2012-2015		95th percentile*		90th percentile*		Classification	
	E. coli	IE	*E. coli*	IE	E.coli	IE	2015	2014 projected
			Colony forming units (cfu)100ml					
St Davids - Benllech	76	76	49.81	51.31	38.3	38.41	EXCELLENT	EXCELLENT
Tal-y-Bont	76	76	72.26	39.33	51.96	30.66	EXCELLENT	EXCELLENT
Tenby North	76	76	67.27	45.12	48.24	34.38	EXCELLENT	EXCELLENT
Tenby South	76	76	76.19	46.37	53.9	35.59	EXCELLENT	EXCELLENT
Traeth Gwyn New Quay	76	76	90.55	97.31	61.87	64.17	EXCELLENT	EXCELLENT
Trearddur Bay	76	76	27.06	41.85	22.53	32.36	EXCELLENT	EXCELLENT
Trecco Bay Porthcawl	76	76	120.58	50.76	79.78	38	EXCELLENT	EXCELLENT
Tresaith	76	76	58.06	38.86	43.11	30.57	EXCELLENT	EXCELLENT
Tywyn	76	76	235.41	68.69	141.88	49.09	EXCELLENT	GOOD
West Angle	75	75	86.64	93.99	61.8	65.6	EXCELLENT	GOOD
Whitesands	76	76	22.32	16.61	19.18	15	EXCELLENT	EXCELLENT
Whitmore Bay Barry Island	75	75	118.4	74.79	81.51	54.57	EXCELLENT	EXCELLENT
Aberafan	76	76	359.35	119.18	209.42	80.34	GOOD	GOOD
Abergele (Pensarn)	76	76	234.72	130.61	150.49	90.25	GOOD	GOOD
Aberystwyth South	75	75	366.72	128.59	219.97	85.48	GOOD	GOOD
Clarach South	76	76	203.62	103	127.99	71.2	GOOD	GOOD
Jackson's Bay Barry Island	75	75	396.25	159.56	236.16	105.6	GOOD	GOOD
Limeslade Bay	76	76	104.84	111.86	69.57	73.41	GOOD	GOOD
Little Haven	75	75	211.4	133.39	132.03	85.67	GOOD	GOOD
Llandudno North Shore	76	76	139.22	120.59	94.63	83.79	GOOD	GOOD
Newport North	76	76	264.25	79.73	156.25	56.56	GOOD	EXCELLENT
Nolton Haven	75	75	325	198.04	191.05	120.36	GOOD	GOOD
Penmaenmawr	76	76	241.43	141.73	151.27	94.23	GOOD	GOOD
Rhyl East	35	35	352.71	177.1	221.39	113.84	GOOD	GOOD
Sandy Haven	75	75	255.11	165.03	151.38	102.41	GOOD	GOOD
Swansea Bay	75	75	498.55	199.56	279.9	125.82	GOOD	SUFFICIENT
Traeth Lligwy	76	76	169.84	152.44	105.52	95.75	GOOD	GOOD
Wiseman's Bridge	75	75	267.06	127.09	163.38	84.46	GOOD	GOOD
Aberdyfi	76	76	764.18	170.77	403.23	105.91	SUFFICIENT	SUFFICIENT
Cemaes	16	16	842.84	221.2	429.54	140.24	SUFFICIENT	SUFFICIENT
New Quay North	76	76	155.82	278.52	99.38	167.45	SUFFICIENT	SUFFICIENT
Rhyl	56	56	377.18	211.97	242.87	141.51	SUFFICIENT	SUFFICIENT

Annex II: Details of abnormal situations at designated bathing water sites in Wales during the 2015 bathing season.

The information below is derived from the water quality data section of Natural Resources Wales' Bathing Water Explorer[8].

Bathing Water	Start-End Date	Abnormal Situation Description	Comment
Freshwater East	17/07/15-18/07/15	Excavation works	An abnormal situation has been declared at Freshwater East. Bathing Water Quality may be affected by excavations being carried out on Freshwater East beach on Friday 17th July. This will be a short term issue and the signs will be removed once the risk has passed which we expect to be in 24 hours' time.
Clarach South	22/07/15-23/07/15	Outfall clearance	An abnormal situation has been declared at Clarach South. NRW will be carrying out clearance of Clarach Bay sea outfall to restore the channel back to its original line and reduce health and safety risks to beach users.
Cemaes	28/07/15-01/08/15	Potential contamination from sewage	NRW are currently investigating a high bacterial result at Cemaes EC Bathing Water, Anglesey on the 21st of July 2015. Investigations are continuing with regards a sewage discharge in the immediate proximity of the bathing water. We believe that until remedial action is carried out to prevent a further discharge, the bathing beach is at risk of further contamination from faecally derived bacteria. As such in order to protect bathing water quality and bathers NRW have to declare an Abnormal Situation at this beach.
Abergele (Pensarn), Kinmel Bay (Sandy Cove), Marine lake (Rhyl), Rhyl, Rhyl East and Prestatyn	21/09/15-25/09/15	Potential contamination from sewage	NRW have been responding the environmental impact following a break in the final effluent sewer line from the above works to sea. Welsh Water are working to repair the line but this is likely to take several days to complete.

[8] Natural Resources Wales http://environment.data.gov.uk/wales/bathing-waters/profiles/

Annex III: Parameters used for classification of coastal waters and transitional waters (such as estuarine bathing waters) under the revised Bathing Water Directive.

Parameters measured are *E.coli* and IE (intestinal enterococci). Percentiles are values that should theoretically be complied with 90 or 95percent of the time (based on the distribution of the data). They do not refer to values complied with by 90 or 95percent of samples.

Classification	Parameter			
	E. coli* 95th percentile	**IE 95th percentile***	***E. coli* 90th percentile***	**IE 90th percentile***
Excellent	250	100		
Good	500	200		
Sufficient			500	185
Poor	Fails to meet any of the above standards			
Not classified	Does not have enough samples in the four year calculation window			

* Colony forming units (cfu)/100ml

Annex IV: Parameters used for classification of inland waters under the revised Bathing Water Directive.

Parameters measured are *E.coli* and IE (intestinal enterococci). Percentiles are values that should theoretically be complied with 90 or 95percent of the time (based on the distribution of the data). They do not refer to values complied with by 90 or 95percent of samples.

Classification	Parameter			
	E. coli* 95th percentile	**IE 95th percentile***	***E. coli* 90th percentile***	**IE 90th percentile***
Excellent	500	200		
Good	1000	400		
Sufficient			900	330
Poor	Fails to meet any of the above standards			
Not classified	Does not have enough samples in the four year calculation window			

* Colony forming units (cfu)/100ml

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