**BATHING WATER QUALITY:** background on standards, assessment and parameters analysed

The results of samples taken to date for 2011 bathing water season for each of **15** EU(European Union) identified beaches are displayed on this website (as submitted to An Taisce and EPA). This monitoring is conducted as per Bathing water Quality regulations 2008. Results for 2 other beaches which are not officially identified are also included. Of the **15** designated beaches **13** have been awarded **Blue flag** status for 2010. One beach has been awarded a **Green Coast** award in Kerry i.e. Beal Bán. Further details on blue flag and greencoast awards can be found in An Taisce website.

**What beaches are monitored in Kerry?**

Throughout the bathing water season up to 21 beaches are monitored in Kerry

**EU identified and Blue flag beaches:**
- Ballybunnion North
- Ballybunnion South
- Ballyheigue
- Banna
- Fenit
- Maharabeg
- Fionntrá(ventry)
- Rossbeigh
- Kells
- White Strand, Cahersiveen
- Baile an Scelige(Ballinskelligs)
- Doire Fhionnain(Derrynane)
- Inch

**EU identified beaches only:**
- Castlegregory
- Inny strand, Waterville

**Green coast beaches(not officially designated)**
- Beal Bán

**Non designated Beaches:**
- Derrymore

Specific information on each of beaches can be got by clicking on any of named beaches in home page.
Water Quality information on each beach is displayed in tabular format for each of parameters monitored and in graphical format for two significant microbiological parameters

**However before clicking for specific information it is important that you read general background information as outlined below**

**How often are bathing waters monitored?**
During bathing season all officially identified beaches are required to be monitored at least once every two weeks. In Kerry all beaches are monitored at a higher frequency than is mandatorily required. In the cases of those beaches which have blue flags the number of samples to be reported for assessment purposes to An Taisce (the blue flag authority in Ireland) for each specific beach is pre determined prior to season. The frequency of sampling is increased where problems are identified during course of monitoring. Samples are taken at area of maximum bather density usually just above waist height and opposite point where blue flag is flying. In addition at least once per month and at a higher frequency where problems are identified, samples are taken of inlets within or in vicinity of designated Blue flag area.

*For specific sampling requirements for each beach please click on specific beach location*

**What water quality Parameters are monitored for designated or blue flag beaches?**
All bathing water samples are sampled and analysed for following microbiological and Physiochemical parameters, either at site (field analysis) or in Kerry Co Council Environmental laboratory by qualified scientific personnel. At least 6 different parameters are analyzed in each sample, however in the case of beaches in Kerry the most significant or critical parameters are the two microbiological parameters.

*The significance of each parameter is discussed in Appendix 1*

**Microbiological parameters:**

*Escherchia coli(Ecoli), Intestinal Enterococci*

**Physiochemical Parameters**

*Temperature, Salinity, ph, Visual Inspection*
How are parameters used to assess EU identified beach status?

The water quality of beach is assessed on how each beach adheres to specific standards for each parameter. Adherence to EU standards are based on given % compliances over number of samples submitted to two sets of standards, mandatory and stricter guide levels. These standards are as set down in *Bathing water Quality regulations 2008*. At present EU standards are as outlined in Table 1 and assessment of bathing water will be based on these standards until 2013 for the purpose of adherence to 2008 Bathing water regulations. After 2013 assessment will be based as described in next section for blue flag /Green coast beaches

The standards are as outlined in Table 1

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Units</th>
<th>G(Guide)</th>
<th>I (Mandatory)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microbiological</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escherichia coli(E.coli)</td>
<td>numbers/100 ml</td>
<td>less than or equal to 100¹</td>
<td>less than or equal to 2000²</td>
</tr>
<tr>
<td>Intestinal Enterococci</td>
<td>numbers/100 ml</td>
<td>less than or equal to 100²</td>
<td></td>
</tr>
</tbody>
</table>

Note 1 : greater than or equal to 80% of samples

Note 2 : greater than or equal to 90% of samples

Note 3 : greater than or equal to 95% of samples

- If over the season for a given beach if samples adhere to guide level compliance for both parameters this bathing water is classified as being of **good** status

- If samples adhere to mandatory status for both parameters but fail to satisfy guide level compliance for either parameter the resultant status of bathing waters is classified as **sufficient**

- If samples do not adhere to mandatory status for either of parameters, the resultant status of bathing waters is classified as **Poor**

Thus in 2010 of the 15 EU identified (or designated) bathing areas monitored in Kerry 14 were of good quality while one was of sufficient quality. For further details consult EPA splash website
How are parameters used to assess Blue flag and Green coast beach status?

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Units</th>
<th>Excellent Quality</th>
<th>Good Quality</th>
<th>Sufficient Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microbiological</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escherichia coli (E. coli)</td>
<td>numbers/100 ml</td>
<td>250</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Intestinal Enterococci</td>
<td>numbers/100 ml</td>
<td>100</td>
<td>200</td>
<td>185</td>
</tr>
</tbody>
</table>

Note 1: based on a 95 percentile evaluation
Note 2: based on a 90 percentile evaluation

Assessment for blue flag from 2011 however is different and is based on another form of statistical analysis i.e. 95% compliance for same microbiological parameters over four seasons (including current). This is also the approach that is proposed to be adopted for EU identified bathing areas from 2013. See table 2. Thus in the case of E Coli a 95% compliance standard of 250 has been set for excellent waters, 500 for bathing waters of good quality. Thus in order to satisfy excellent water status at least 95% of samples analysed over assessment period (4 years) should not contain any sample greater than 250 colonies per 100 ml.

Blue flag requirements denote that bathing areas **must achieve excellent status** based on assessment of sum of current year and previous three years results

Are there any occasions where results may be discounted?

There is provision in regulations that where exceptional circumstances arise during or before sampling, a request to formally discount samples may be sought i.e. derogation. The majority of situations, where this occurs, are after exceptional high rainfall which will greatly increase the risk of elevated microbiological results. In such a situation the Local Authority has to apply to EPA seeking derogation and they will adjudicate on the validity of request. Up to 15% of samples are allowed to be discounted for purpose of assessment
APPENDIX 1

MICROBIOLOGICAL PARAMETERS:

**Escherichia coli** (also known as E Coli)

This is a microbiological parameter and is assessed in laboratory. This parameter refers to a family (genus) of bacteria which arise from gut of humans or animals and they are a sub family of total coliforms. Their presence therefore may suggest contamination from one or more of following possibilities Human sewage, septic tank effluent, farmyard waste or runoff, grazing animals, seabirds. They are what is termed indicator bacteria, which means that while they themselves may not be pathogenic (harmful to public health) their presence greatly increases the risk that such harmful bacteria exist e.g. Salmonella, It is therefore very important for health of bathers that this parameter is kept to a minimum and below guide level in bathing water

<table>
<thead>
<tr>
<th>Standards (Bathing water regulations)</th>
<th>Guide level = 100/100ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to guide level = 80% of samples submitted</td>
<td></td>
</tr>
<tr>
<td>Mandatory limit = 2000/100 ml</td>
<td></td>
</tr>
<tr>
<td>Adherence to Mandatory limit = 95% of samples submitted</td>
<td></td>
</tr>
</tbody>
</table>

| Standards (Blue Flag) | 95% compliance (over 4 seasons) = 250/100 ml |

**Intestinal Enterococci**

<table>
<thead>
<tr>
<th>Standards (Bathing water regulations)</th>
<th>Guide level = 100/100ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to guide level = 80% of samples submitted</td>
<td></td>
</tr>
</tbody>
</table>

| Standards (Blue Flag) | 95% compliance (over 4 seasons) = 100/100 ml |
This is a microbiological parameter and is assessed in laboratory. This parameter refers to a family (genus) of bacteria, which like Escherichia coli, arise from gut of humans or animals. Their presence therefore may suggest contamination from one or more of following possibilities: Human sewage, septic tank effluent, farmyard waste or runoff, grazing animals, seabirds. Their presence at levels in excess of guide level greatly increases risk to health of bathers. They are considered an even greater risk than E coli due partly to fact that they can survive longer in sea water, particularly where there is seaweed present, which may act as a shelter and food source. It is therefore very important for health of bathers that this parameter is kept to a minimum and below guide levels in bathing water.

**PHYSIO-CHEMICAL PARAMETERS:**

### Temperature

This parameter is a field measurement i.e. measured using probe at time of sampling. There is no standard attached to this parameter. However measuring temperature provides us with useful information on assessing climate trends. In situations where temperature is greater there is perhaps a greater risk that if harmful bacteria are present they will grow more in numbers.

### Salinity

This is a Physiochemical parameter and is assessed in laboratory. This parameter measures salt content of bathing water and is expressed in parts per thousand. Pure Atlantic seawater has a salinity of ca 34 o/oo. Thus the lower the level of this parameter the greater the level of freshwater input into bathing water. Typically after significant rainfall and at an ebbing tide this parameter is at it’s lowest. In 2008 this parameter scored lower in most beaches than at any other time since measurements began principally as a result of one of wettest summers on record. There is no standard attached to this parameter.