**Normal Distribution – Worked Example 1**

The amount of oxygen dissolved in rivers and streams depends on the water temperature and on the amounts of decaying organic matter from natural processes or human disturbances that are present in the water.

The Council on Environmental Quality (CEQ) considers a dissolved oxygen content of less than 5 milligrams per litre (mg/L) of water to be undesirable because it is unlikely to support aquatic life.

At a certain location of Shannon River the daily content of oxygen is normally

distributed with mean equal to 6.3[mg/L] and a standard deviation of 0.6[mg/L].

The CEQ is making control measurements at randomly selected days at this location. What percentage of these measurements would be considered undesirable by the CEQ?

**Solution**

We are told that if the dissolved oxygen content is less than 5 mg/L is undesirable. This corresponds to the shaded area in the graph below.



