Suppose a group of volunteers is planning to build a park near a local lake. The lake is known to contain low levels of arsenic (As). Therefore, prior to starting construction, the group decides to measure the current level of arsenic in the lake.

If a 13.1 cm3 sample of lake water is found to have 173.9 ng As, what is the concentration of arsenic in the sample in parts per billion (ppb), assuming that the density of the lake water is 1.00 g/cm3 ?

Solution:

$$c_{ng/ml} = \frac{173.9 \text{ ng}}{13.1 \text{ mL}} = 13.2748$$

1 ng/mL = 1 ppb

c(As)= 13.2748 ppb

Answer: 13.2748 ppb