# NMS Gross Alpha and Beta in Drinking Water Data Dictionary

**Alpha Decay**

A type of radioactive decay in which an atomic nucleus emits an alpha particle (helium nucleus, i.e. two protons, two neutrons), yielding an atom with a mass number four less and atomic number two less.

**Beta Decay**

A type of radioactive decay characterized by the emission of high-energy, high-speed electrons or positrons (e.g. potassium-40 decay).

**Becquerel (Bq)**

The International System of units (SI) of radioactivity used to measure the rate of radioactive decay. One becquerel is defined as one decay per second.

**Bq/L**

Becquerel per litre. The units for radioactivity concentration in water.

**Error**

The amount the calculated value may vary from the true value.

**Gross Alpha Activity**

The radioactivity of a sample attributable to decay via alpha particle emission.

**Gross Beta Activity**

The radioactivity of a sample attributable to decay via beta particle emission.

**Location**

The drinking water is collected from either Britannia or Lemieux water treatment plants in Ottawa, ON.

**Start Date**

The date the drinking water was collected, usually once per week.

**Type**

The type of water sample is either “treated” or “raw”. In 2010, the type of water collected was switched from “raw” to “treated”. Comparison trials showed that the results were similar for both types of water.

# References

*Environmental Radioactivity in Canada 1997-2009.* 2013, Radiation Surveillance Division, Health Canada: Ottawa, Ontario

Health Canada. *Canadian Radiological Monitoring Network*. [Cited 2014-01-08]. Available from: http://www.hc-sc.gc.ca/ewh-semt/contaminants/radiation/crmn-rcsr/index-eng.php

United States Environmental Protection Agency. *Radiation Glossary*. [Cited 2014-01-08]. Available from: http://www.epa.gov/radiation/glossary/