

WATER

RADIOCHEMICAL

The Federal Safe Drinking Water Act requires that all of the nation's public water supplies be tested periodically for various potential contaminants.

Radiochemical analysis of drinking water is one of several services provided by the Department of Environmental Quality (DEQ) and included in the annual public water supply fee for regulatory services. Results of recent analyses of your system are enclosed and the purpose of this fact sheet is to assist you in interpreting the meaning of this report.

Radioactivity may be present in drinking water, as it is present almost everywhere in small amounts. Natural environmental radioactivity in water may be present in highly variable quantities depending on the local geological surroundings.

Man made radioactivity is used in industry and medicine and although highly regulated could be a possible source of environmental contamination.

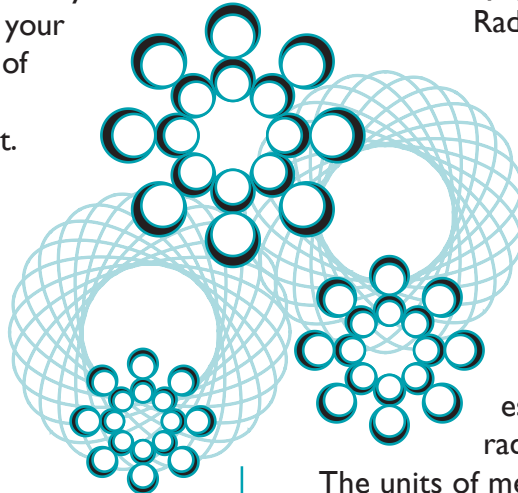
Some radioactive materials decay by disintegration of the nucleus of the unstable nuclide by spontaneous emission of subatomic particles called alpha particles or beta particles. The radioactivity due to these disintegrations can be measured and reported as Gross Alpha

Radioactivity (GAR) or Gross Beta

Radioactivity (GBR) respectively.

Certain radioactive materials decay by emission of gamma rays or photons, but they usually have an associated alpha or beta particle emission as well. This, along with the minimal cost of the tests, makes the measurement of GAR and GBR a good screening tool for establishing the relative amounts of radioactivity in drinking water.

The units of measurement of radioactivity in drinking water samples is usually the picocurie per liter of water (pCi/L), which is equivalent to 2.22 disintegrations per minute per liter.



The EPA maximum allowable levels for radioactivity in public drinking water supplies are:

Gross Alpha Radioactivity (GAR)	15 pCi/L
Gross Beta Radioactivity (GBR)	50 pCi/L
Radium	5 pCi/L

These maximum allowable levels are based on there being a risk of one in ten thousand to one in a million that an individual will develop cancer in their lifetime.