

# FORMER CLOCK FACTORY SITES IN WATERBURY: UPDATE

#2

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**Main Points**

- Radium is a radioactive material that was used in painting clock dials at former clock factories.
- The CT DPH has evaluated radiation levels taken at these sites.
- None of the radiation levels were high enough to cause immediate health problems or to require moving building occupants.
- Some areas were found to have radiation levels that present a low risk with long-term exposure.
- It is important that exposure to radiation be ended. The EPA and CT DEP are evaluating the best clean-up method.

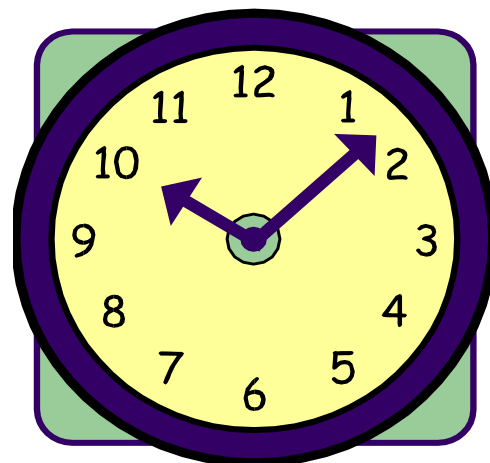
## Background

This fact sheet was developed by the CT Department of Public Health (DPH) to update site workers and residents about the former clock factory sites in Waterbury. The Connecticut Department of Environmental Protection (DEP), the U.S. Environmental Protection Agency (EPA), the federal Agency for Toxic Substances and Disease Registry (ATSDR) and the Connecticut Department of Public Health have been investigating the use of radium at these sites. Radium is a radioactive material that was used in painting dials on clocks because it makes paint glow in the dark. It was believed to be used from the early 1900's through the 1940's in the production of clocks.

The Waterbury sites include:

- ⇒ the former Waterbury Clock Factory complex,
- ⇒ the former Lux Clock Company (now Anchor Advanced Products), and
- ⇒ the former Benrus Clock Company (now Bender Plumbing).

This fact sheet summarizes the findings of a Public Health Assessment that evaluated radiation contamination data collected by the CT DEP, EPA and the U.S. Department of Energy. This evaluation was done to determine whether a risk to public health exists at these



## What Were the Results of the Assessment?

### **Waterbury Clock Factory**

Some building complex areas had radiation readings that present a low risk to health with long-term (life-time) exposure. These areas include:

#### **BELCO:**

- Cutting room and machine shop on the second floor
- Storeroom, hallway and Liba section on the third floor
- Areas of the fourth floor
- A rented area of the fifth floor

#### **ENTERPRISE APARTMENTS:**

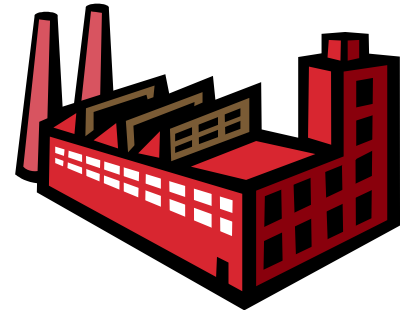
- Some areas of one apartment on the fourth floor
- Some areas in nine apartments on the fifth floor
- A section of the fifth floor hallway

#### **NEW OPPORTUNITIES FOR WATERBURY (NOW):**

- Thirteen offices on the third, fourth and fifth floors
- Conference room on the fifth floor

#### **VILLE SWISS AUTOMATICS AUTOMOTIVE:**

- Areas on the third, fourth and fifth floors



### **Benrus Clock Company Building**

Radiation levels were elevated in isolated areas in the fourth, fifth and seventh floors. This building is now occupied by the Bender Plumbing Company.

### **Lux Clock Company Building**

Radiation levels were elevated in isolated areas of the first through the fourth floors of this building which is now occupied by Anchor Advanced Products.



## I Work or Live on These Sites. What Do the Results Mean For My Health?



None of the radiation levels found were high enough to pose an immediate health risk to people working or living in the buildings. Some areas had radiation levels that were of health concern for long-term (lifetime) exposures. These are levels that are above the EPA clean-up level of 15 millirem per year. This means that people who worked or lived in these areas for many years may have a low increased risk of developing bone cancer. People who were exposed to radon gas over a lifetime have a very low risk of developing lung cancer. See below for more information on radiation and health. If you have more questions about a specific area in these buildings, call the CT DPH at (860) 509-7742. Based on the findings, it is unlikely that anyone will develop illnesses. If you have specific questions about your health, we recommend talking with your medical provider.

## What Should be Done About the Contamination?

- Although levels of radiation are not high enough to cause immediate health problems, it is important that exposures to radiation contamination above the EPA level be stopped to minimize potential long-term health effects. The EPA and CT DEP are reviewing the health assessment findings to decide on the best clean-up method.
- Some areas of the former Waterbury Clock Factory site need to be sampled for radon.

## Background On Radiation And Health



### What are the Types of Radiation?

Radiation is produced when unstable elements such as radium decay (break down) and give off radioactive particles or rays. *Radon* is a gas formed when radium decays. The hazard associated with radiation depends on:

- the form of radiation;
- the element that is radioactive and its decay products; and
- the route of exposure.

#### *Forms of Radiation Associated with Radium*

**Alpha** is a heavy particle that is mainly a hazard to internal organs exposed to radium or radon. These particles only travel a short distance (inches) in air and cannot go through the skin.

**Beta** is a light particle that can sometimes penetrate the skin. Beta particles can travel several feet through the air and may expose the skin and internal organs of those living or working near the radium dust.

**Gamma** is a ray that can penetrate nearly any substance. Gamma rays can travel great distances in air, and expose those living or working near the radium dust.

## Background on Radiation ... Cont.

### What are the Health Effects of Radium Radiation Exposure?

The health effects of radiation are well studied at higher levels of exposure, but the long-term effects of exposure to low levels of radiation - such as those found in the clock factories - have never been observed in humans. We assume that radiation exposure increases the risk of cancer by a small amount; the lower the exposure, the lower the risk.

Radiation is energy that may damage the human body by damaging cells or their genetic material (DNA). Some forms of radiation are known to cause cancer. There are 3 types of potential exposures when radium is present:

- *gamma ray exposure* occurs when people are near the radium;
- *radon exposure*, occurs when radium decays into radon and is inhaled (breathed); and
- *radium dust exposure* occurs through *inhalation and ingestion (through the mouth)* of airborne dust.

For both radon and radium, the hazard comes from radioactive materials getting into the body. The effects are mainly to specific organs:

- the lungs for radon and its decay products
- lungs and bone for inhaled or ingested radium.

Bone cancer is connected with radium exposures. It was found among workers who worked directly with radium and ingested large amounts of it over a long period of time. It is important to remember that the health effects of radiation exposure vary according to:

- \* how long you were exposed ; and
- \* how much radium or radiation you were exposed to.

## FOR MORE INFORMATION:



|   |  |   |   |
|---|--|---|---|
| CT DEP<br>Air Quality &<br>Radiation Division<br>79 Elm St.<br>Hartford, CT 06106<br>(860) 424-3029 | Waterbury Health Department<br>95 Scovill St, Suite 100<br>Waterbury, CT 06706<br>(203) 574-6780 | CT DPH<br>EEOH Division<br>410 Capitol Ave<br>Hartford, CT 06134-0308<br>(860) 509-7742 | U.S. EPA<br>Region I<br>JFK Building CPT<br>Boston, MA 02203-2211<br>1-888-372-7341 |
|   | ATSDR<br>1600 Clifton Rd, MS E-56<br>Atlanta, GA 30333<br>1-800- 447-1544                        |   |   |

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