

# U.S. Radium Corp.

## New Jersey

EPA ID#: NJD980654172

### EPA REGION 2 Congressional District(s): 10

Essex  
City of Orange

NPL LISTING HISTORY  
Proposed Date: 12/1/1982  
Final Date: 9/1/1983

## Site Description

The former U.S. Radium Corporation facility, which covers 2 acres in the City of Orange, Essex County, New Jersey, is a former radium-processing plant where extraction, production, application, and distribution took place from about 1915 through 1926. Approximately 1/2 to 2 tons of ore per day was processed and disposed of on and off the property. As a result of those operations, the facility buildings and soil became contaminated with radionuclides. In addition, radium-contaminated soil and debris were identified at approximately 250 noncontiguous properties in the vicinity of the former plant and at various other locations throughout the municipalities of Orange, West Orange, and South Orange.

At this time, investigations to identify additional contaminated properties are complete, and the cleanup of contaminated properties is essentially complete. The noncontiguous affected properties are occupied by residences, light industries, offices, grocery stores, and apartment buildings. The main portion of the Site is located in a densely populated, urban residential neighborhood. All area residents and businesses are supplied with municipal water.

Site Responsibility: This site is being addressed through Federal actions.

## Threat and Contaminants

Soil contained radium-226 and other radioactive materials. Direct exposure to radiation, inhalation of radioactive dust particles, or inadvertent ingestion of radioactive particles may cause adverse health effects in the form of an increased risk of certain types of cancer. Of the more than 250 radium-contaminated properties found over the course of the investigation and cleanup of the site, only one property remains to be addressed.

## Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial action focusing on cleanup of the entire site.

### Response Action Status

Immediate Actions: EPA installed radon mitigation systems and gamma radiation shielding at certain residential and commercial properties where elevated levels were detected, thereby minimizing the potential for exposure at these properties until they could be cleaned up. In addition, a fence was installed around the perimeter of the main site to prevent trespassers from coming into contact with contaminated material.

Entire Site: Remedies for the site soil and building material were selected in two Records of Decision, signed in September 1993 and August 1995. The remedial action involved the excavation and off-site disposal of radium-contaminated material at the former U.S. Radium plant site, and at affected residential and commercial properties. As was stated earlier, more than 250 contaminated properties were identified out of over 650 properties investigated.

The long-term soil remedy has been divided into phases. The remedial actions for Phase 1 and Phase 2 (71 properties) started in January 1997 and were completed in December 1998. The remedial actions for Phase 3 (63 properties) began in September 1997 and were completed in October 1999. Phase 4 (the plant site and 23 other properties) began in September 1998 and it was completed in September 2001. Phase 5 (37 properties) began in September 2000 and was completed in December 2002. Phase 6 (34 properties) began in September 2001 and was completed in September 2003, and Phase 7 (18 properties) was initiated in September 2002 and was completed in September 2005. Phase 8 of

the remedial action, which currently includes only 1 property, will be conducted at some time in the future.

EPA completed a ground water investigation of the site in August 2006, and determined that no action is necessary to address ground water at the site. Monitoring for a period of at least five years will be conducted to assure that no action remains protective of human health and the environment. The no action remedy was selected in a September 2006 ROD, at which time the site also achieved construction complete status.

## **Cleanup Progress**

The soil/building material portion of the remedy was performed in seven phases. Phase 1 and Phase 2 of the remedial action were completed in December 1998 and resulted in the removal of approximately 25,000 cubic yards (approximately 38,400 tons) of radium contamination. Phase 3 was completed in October 1999 and resulted in the removal of approximately 9,000 cubic yards (approximately 14,400 tons) of radium-contaminated material. Phase 4 was completed in September 2001 and resulted in the removal of approximately 34,000 cubic yards (approximately 54,400 tons) of radium-contaminated material. Phase 5 was completed in December 2002 and resulted in the removal of approximately 10,000 cubic yards (approximately 16,000 tons) of radium-contaminated material. Phase 6 was completed in September 2003 and addressed approximately 5,000 cubic yards (approximately 8,000 tons) of radium-contaminated material. Phase 7 was completed in September 2005 and addressed approximately 1,996 cubic yards (approximately 3,200 tons) of radium-contaminated material. Due to access issues, one remaining property will be addressed at some time in the future.

Ground water monitoring will be conducted periodically for a period of at least five years. The results will be reviewed and the monitoring program will be adjusted on an as-needed basis. The site is categorized as construction complete.

## **Site Repositories**

Orange Public Library, 348 Main Street, Orange, New Jersey 07050