

Short Beach Park and the Stratford Landfill Operable Unit 9 Remedial Investigation Human Health Risk Assessment

The purpose of this fact sheet is to notify visitors to Short Beach Park and the general public of the completion of the Operable Unit 9 Remedial Investigation (RI) report which presents the results of the soil sampling that has been completed throughout Short Beach Park and the Stratford Landfill. The report is now available to the public at the Stratford Library and Stratford Health Department. The fact sheet is also intended to summarize and clarify the human health risks that are detailed in the Human Health Baseline Risk Assessment, Section 6 of the RI report.

Overview

The Raymark Superfund Site is divided into nine parts (operable units) in an effort to effectively manage the various studies that have taken place throughout Stratford. Short Beach Park and the Stratford Landfill area is known as Operable Unit No. 9 (OU9). As part of the continuing investigations of Raymark waste in Stratford, EPA conducted soil sampling at Short Beach Park and the Stratford Landfill in December 2003 through February 2004.

The purpose of the more recent sampling was to:

- supplement sampling conducted in 1993 to fully characterize the extent of Raymark waste in Short Beach Park and the Stratford Landfill.
- provide the data necessary for an evaluation of the risks to human health and the environment in order to develop a final cleanup approach for this portion of the Raymark site.

As cleanup options are developed for Short Beach Park and the Stratford Landfill, the public will have an opportunity to learn more about them. The public will also be able to comment on the various options before EPA makes a final decision about how to proceed. There is information on page 4 on how to find out about the Raymark site and how to participate as a community member.



Some key findings of the RI report

- Analysis of the soil sampling shows that recreational visitors are not currently facing health risks from exposure to Raymark waste at Short Beach Park.
- Raymark Waste was found in 10% of the park's 84 acres, but only in the top 6 inches in 2 out of 477 locations sampled.
- The temporary cover in the area of the soccer fields along Dorne Drive, installed in 1993 and updated in 1995, is a protective measure that currently prevents exposure to Raymark waste.
- While Raymark Waste was found throughout the Stratford Landfill, the risk of exposure to Raymark waste in the landfill is greatly diminished because of the limited use of this facility today.
- The findings of the report indicate a need to develop a permanent remedy for OU9 in the years ahead, so that public health is protected in the future.

The information in this fact sheet was developed in consultation with the Stratford Department of Health.

EPA New England website for past Raymark Bulletins
www.epa.gov/region01/superfund/sites/raymark/bulletin

Town of Stratford Department of health
<http://www.townofstratford.com/health/raymark.shtm>

Background

Short Beach Park and the Stratford Landfill were originally used as a single landfill from the 1940s to the early 1970s. The area was used for waste disposal of materials that were not accepted by the town incinerator, including waste from Raymark and other industries. In 1972, the area now known as Short Beach Park began to be filled using sand dredged from the Housatonic River and Bridgeport Harbor. Short Beach Park now consists of a soccer field, baseball fields, a nine-hole golf course, a mini-golf course, tennis and handball courts, and beach and picnic areas. The current Stratford Landfill is still used for leaf disposal every year.

In 1993, after soil sampling by the U.S. Environmental Protection Agency (EPA) revealed the presence of Raymark waste at Short Beach Park, a temporary cover was constructed over part of the soccer field. The cover consisted of geotextile fabric and 12 to 18 inches of soil. Up to 3 feet of additional soil was added in 1995. This cover remains in place today, ensuring that children and adults who use the field are not exposed to Raymark waste.

Because the entire OU9 area was used as a landfill, it contains many types of waste. However, EPA's report is limited to identifying only Raymark waste. Raymark waste in soil is defined as containing lead above 400 parts per million (ppm), and asbestos (chrysotile only) greater than 1 percent, together with either copper above 228 ppm or Aroclor 1268 (a polychlorinated biphenyl or PCB), above 1ppm.

What is the Human Health Risk Assessment?

When investigating and cleaning up a site like Raymark, it is important to examine whether or not the chemicals found in the soil will affect the health of the people who may go to those areas. A human health risk assessment measures the likelihood that these chemicals will cause health risks to individuals who come into contact with them now or in the future. It provides the community with an understanding of the potential health risks posed by chemicals if no cleanup were to take place. It is important to keep in mind that risk is based not just on the presence of toxic chemicals, but on a person's exposure to these chemicals through ingestion, inhalation, or contact with the skin over time.

The purpose of the OU9 human health risk assessment is to estimate possible health risks to the public from chemicals detected in soil samples that were collected in areas of Short Beach Park and the Stratford Landfill where Raymark waste was found. It

provides the necessary framework to decide the need for cleanup at the park and landfill. Because the RI for OU9 examines only Raymark waste, the human health risk assessment portion of the report addresses only the risks associated with exposure to areas containing Raymark waste.

EPA based its human health risk assessment for Short Beach Park and the Stratford Landfill on some rather conservative assumptions about who really uses these lands and how much time they actually spend in areas that contain Raymark waste. Raymark waste was found in only 10% of the park's 84 acres. When EPA estimated risks from exposure to contamination in Short Beach Park, it assumed people would spend all of their time in that 10% of the park where Raymark waste was found. The assumption that people would visit only those areas found to contain Raymark waste is very health protective and could overestimate possible health risks. In reality, recreational visitors are likely to use the park's playing fields, golf courses or walking paths and therefore are more likely to be exposed to those areas not containing Raymark waste.

While trying to be as health protective as possible, EPA also examined the risks to grounds keepers and commercial landfill workers based on their exposure to soil at depths up to 15 feet below the ground. However, grounds keepers would only be exposed to soil at greater depths if they engaged in activities such as digging. Commercial landfill workers are also unlikely to be exposed to chemicals deep in the ground, since the landfill is closed and there are no full-time workers there, except for leaf collection during part of the year.

How Risks Are Calculated

Different routes of exposure to a contaminant can result in different health concerns. The following factors and characteristics determine the type and severity of health effects that may occur as a result of exposure to contaminants:

- Concentration (how much?)
- Frequency (how many days per year)
- Duration (how many years?)
- Toxicity (what are the characteristics of the chemical?)
- Carcinogenic or noncarcinogenic contaminant
- Age (child or adult receptor)
- Specific sensitive groups (e.g. pregnant women)

EPA also evaluated exposures to future residents - people who might live in these areas in the future if Short Beach Park or the Landfill ever become residential property. This group was included because there are currently no formal or legal land use restrictions that would prevent such a future use. The Town of Stratford is considering actions to institute environmental land use controls at Short Beach to address this issue.

Interpreting the Results

The risk assessment evaluates exposure in terms of cancer and non-cancer risks. For adult and children park visitors as well as park grounds keepers, both types of risk are minimal. Exposures and risks to future residents at Short Beach Park, full time landfill workers and pregnant grounds keepers are estimated to be higher. Asbestos risks were evaluated differently from risks to other chemicals. The presence of asbestos at greater than 1 percent in soil presents a possible risk because it could be inhaled if the soil is disturbed and asbestos particles in the soil get into the air. Right now, all areas where asbestos was found at levels above 1 percent are covered by pavement, grass, or other vegetation. Therefore, asbestos does not currently pose a risk unless the vegetated soil is disturbed or pavement is removed and the soil beneath is disturbed.

There is a slightly increased cancer risk due to exposure to Raymark waste for future residents (particularly children) of Short Beach Park and full-time commercial workers at Stratford Landfill. As noted previously, however, these groups do not currently exist so there is no reason for immediate concern.

A Closer Look at the Top 6 Inches

EPA collected soil samples from different depths, including the top 6 inches, where there is the greatest potential for people to have direct contact with the soil. The Connecticut Department of Public Health (CTDPH) reviewed and evaluated the data from the samples taken from outside the area protected by the temporary cover on the soccer field to determine whether Short Beach Park surface soils present a public health hazard to adults and children who use the park. CTDPH completed its report in June 2004 and concluded that exposures to the top 6 inches of soil outside the protective cover do not present a public health threat.



EPA sampling at Short Beach Park in December 2003.

Summary of Sampling

Soil samples were collected from Short Beach Park and the Stratford Landfill between December 2003 and February 2004.

Over 1,300 samples were collected at varying depths throughout the landfill and park.

1,072 of the samples were collected at 447 locations in Short Beach Park.

Raymark waste was found in 12 samples in the top 2 feet of soil; the rest of the samples containing Raymark waste were at deeper depths.

Raymark waste was found in the top 6 inches in 2 out of the 447 locations.

These samples were tested for lead, copper, Aroclor 1268 and asbestos.

Raymark waste was found in small areas that when added together make up only about 10% of the park.

Analytical results from all soil samples collected at the Stratford Landfill and Short Beach Park between 1993 and 2004 are included in Appendix B of the OU9 report.

Putting It All Together

Cancer and non-cancer risks from Raymark waste are very low for people who currently use Short Beach Park and the Stratford Landfill (children and adult recreational visitors, grounds keepers, landfill workers), and who may be exposed to Raymark waste. Moreover, EPA's risk assessment is based on conservative assumptions about who really uses these lands and how much time they actually spend in areas that contain Raymark waste. Even though there is currently no concern about health risks due to exposure to Raymark waste in these areas, the findings indicate the need to develop a permanent remedy for OU9 so that public health is protected in the future.

INFORMATION REPOSITORY, WEBSITES, and AGENCY CONTACTS

Where do I get information about the Raymark Site as well as general Superfund information?

Additional information is available in the site repository in the reference section of the Stratford Public Library at 2203 Main Street. This repository contains general materials about EPA's Superfund program, Superfund laws, and many volumes of Raymark specific reports and data including:

- Copies of all current and past Raymark Bulletins.
- Copies of Remedial Investigation Reports for Ferry Creek, the Raymark Facility, Raybestos Memorial Ballfield, Additional Properties, Short Beach Park and Stratford Landfill.
- Copy of the Strategic Redevelopment Initiative Pilot Project report.

There is additional information about the Raymark Superfund Site on the internet:

Stratford Health Department pages of the Town of Stratford website
<http://www.townofstratford.com/health/raymark.shtm>

EPA New England website for Raymark
www.epa.gov/region01/superfund/sites/raymark

Contacts for more information about the Raymark project:

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What is the Raymark Advisory Committee?

The Raymark Advisory Committee (RAC) is the local advisory group organized by the Town of Stratford to work with the U.S. Environmental Protection Agency (EPA) and the Connecticut Department of Environmental Protection (CT DEP) on the investigation and cleanup of contamination associated with the Raymark Superfund Site. The Stratford Town Council sought to establish a broad based membership of citizens from affected neighborhoods and businesses when it established the committee in June, 2000. The RAC members are charged with ensuring that the Superfund cleanup process addresses the many individual concerns within the town, reconciling the collective interests of all Stratford residents in their advice to the environmental regulatory agencies.

The public is invited to attend and participate at all meetings!

The RAC meets periodically on the second Tuesday at 6:30 p.m. at the Stratford Health Department located at 468 Birdseye Street in Stratford. The public is invited. Please call the Stratford Health Department at 385-4090 or visit its website to confirm the date of the next meeting. (<http://www.townofstratford.com/health/raymark.shtm>)