



Proposed Plan

Superfund Records Center
SITE: Central LF
BREAK: 4.9
OTHER: 21452

Central Landfill Superfund Site Johnston, RI

The Proposal...

After careful study of the surface water, groundwater and sediments surrounding Central Landfill, EPA has determined that no additional cleanup measures are necessary because:

- Approximately 7 years of **environmental monitoring** show that contaminant levels from the site in the groundwater, surface water and sediments beyond the edge of the waste management area do not exceed EPA's standards or the State of Rhode Island's environmental standards

The 1994 Record of Decision requires the following cleanup activities:

- A **multi-layer cap** is being installed over the inactive phase I area of the landfill
- A groundwater **pump and treat system** will be installed in the contaminated "hot spot" area
- **Deed restrictions** will be placed on groundwater use and development around the landfill
- **Continued monitoring** will ensure the Site does not pose a current or potential threat to human health or the environment

How would the cleanup affect the local area?

Find out about the proposed plan at an informational public meeting on August 14. At the meeting, EPA will respond to your questions and concerns about the proposed plan and how it may affect you. For further information on the meeting, call EPA Community Involvement Coordinator Sarah White at 617/918-1026.

What do you think?

EPA is accepting public comment on this proposal from August 14 through September 14, 2001. You don't have to be a technical expert to comment -- if you have a concern or preference EPA wants to hear it before making a final decision on how to protect your community. To comment formally:

Offer oral comments during the comment portion of the public hearing on August 30, (see page 3 for details)

Send written comments postmarked no later than September 14 to:
Byron Mah
Remedial Project Manager
U.S. Environmental
Protection Agency
Region I, HBT
One Congress Street; Suite 1100
Boston, MA 02114

E-mail comments by
September 14 to:
Mah.Byron @.epa.gov

Information Session

7:00 pm
Tuesday, August 14, 2001
Auditorium
Johnston High School
Johnston, RI

Formal Hearing

7:00 pm
Thursday, August 30, 2001
Johnston High School
Cafeteria

In accordance with the Comprehensive Environmental Response, Compensation and Liability Act, (Section 117) the law that established the Superfund program, this document summarizes EPA's cleanup proposal. For detailed information on the options evaluated for use at the site, see the Feasibility Study available for review at the information repositories at the Marion J. Mohr 1 Memorial Drive, Johnston, RI and at EPA's One Congress Street Office in Boston.

21452

Central Landfill Groundwater Flow Johnston, RI

Central Landfill Phases

-  Phase 1: Superfund Area
-  Phase 2: Solid Waste Expansion Area
-  Phase 3: Solid Waste Expansion Area

 Groundwater Flow Direction

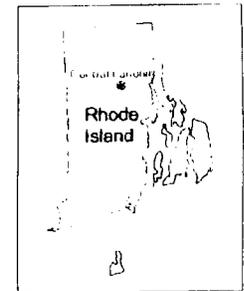
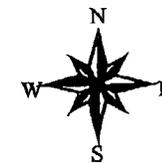
 Surface Water

 Rivers

 Parcel Boundary

 Public Water Supply Line

 Approximate Watershed Boundary



0.1 0 0.1 0.2 0.3 Miles



Data Sources: Landfill phases, parcel boundaries, watershed boundary from GZA GeoEnvironmental, Inc.
Map Created: January 10, 2001;
<http://projects/sites/centralandfill/groundwater.apr>



A Closer Look at EPA's Proposal...

The 154-acre Central Landfill site consists of two areas: a 33-acre active municipal solid waste disposal area (Phase II) which overlaps a 121-acre inactive municipal hazardous waste disposal area (Phase I). In the early 1990's, EPA's investigation of the 121-acre portion of the landfill revealed a 0.5 acre area where, according to documented records, approximately 1.5 million gallons of hazardous waste, including solvents, acid, oils and latex wastes, had been dumped.

In 1986, the Site was placed on the EPA's National Priorities List making it eligible for cleanup under the EPA's Superfund Program. The Superfund Program targets the nations' most hazardous disposal sites for investigation and cleanup.

EPA divided the site into two Operational Units (OU's), one for source control (OU1) and one for management of migration (OU2).

In 1987, Rhode Island Resource and Recovery Corporation (RIRRC), signed an administrative order of consent (AOC) with EPA to investigate the extent of contamination at the landfill itself.

In 1994, a Record of Decision was issued requiring that a multi-layer cap be installed over the 121-Acre Phase I / OU 1 area; hydraulic containment and treatment of contaminated groundwater found in the hot spot area; implementation of access and institutional controls; and initiation of a long term monitoring program. RIRRC and EPA entered into a consent decree in 1996 to address these issues.

When complete, the cap will minimize the amount of rainwater filtering through the hazardous waste in the landfill and will, overtime, significantly reduce the amount of contaminants migrating into the groundwater beneath the landfill. In addition,

the groundwater pump and treat system will address contamination at levels of concern in the groundwater under the hot spot within the landfill.

In 1994, the AOC was amended to include a requirement that RIRRC investigate groundwater migrating from beneath the landfill and its impact on surface waters, sediments, and groundwater surrounding the landfill. This study is known as Operable Unit 2 (OU2). The geographic extent of OU2 study area begins at the toe of the slope of the landfill extending out to areas 1000'-2000' away from the toe including the Upper Simmons and Almy Reservoirs.

As a result of the investigations and studies performed in the OU2 area, EPA is proposing that no additional remedial action be required beyond the remedy set out in the 1994 Record of Decision. To ensure that the Site does not pose a threat to human health or the environment, RIRRC has agreed to incorporate some or all of the off site monitoring performed in the OU2 study area into the Scope of Work for the 1994 Consent Decree. The following describes the current environmental conditions and findings of the study.

Analysis of Watershed Impacts

The two watersheds studied for Central Landfill are Cedar Swamp Brook Watershed and Almy Reservoir Watershed both of which are located within the larger Pawtuxet River watershed. The investigations revealed that most of the Central Landfill (150 of 154 acres) lies in the Cedar Swamp Brook Watershed. The remaining 4 acres of the site lies in the Almy Reservoir watershed. Most (97.5%) of the groundwater beneath the Site and all of the surface water flows southeast and discharges into Cedar Swamp Brook which in turn discharges to the Upper Simmons Reservoir. The remaining (2.5%) groundwater beneath the Site flows northeast to the Almy Reservoir then to Dry Brook and the Pocasset River. The groundwater does not flow in the direction

of and therefore has no impact on the Scituate Reservoir.

Remedial Investigation

Based on the hydrogeologic data, EPA determined it is highly unlikely for contaminants to travel northeast towards the Almy Reservoir. The data indicates that the contaminants travel southeast and discharge at the Upper Simmons Reservoir. A thorough study including extensive geophysical work has been performed to find preferential pathways, fractures, and fissures that connect groundwater from the landfill to the Upper Simmons Reservoir. Sampling indicates detectable concentrations of site contaminants found beyond the landfill and within the Upper Simmons Reservoir, however, all detections are below the State and Federal Standards for drinking water otherwise known as Maximum Contaminant Levels (MCLs). Cleanup actions for OU1 along with continued monitoring will ensure that these levels are not exceeded.

In addition, both an ecological and a human health risk assessment were performed. These assessments indicate that there is no significant risk to human health or the environment in the OU2 study area.

Human Health Risk Assessment

A human health risk assessment (HHRA) was completed to characterize potential health risks under baseline conditions (i.e., assuming no additional remediation is performed) and to help evaluate whether or not additional remedial response actions are warranted.

Data from surface soils, groundwater, surface water, and sediment were evaluated. Contaminants of potential concern (COPCs) were selected based on comparing site data to appropriate standards and guidelines for each media. Potential human health effects associated with exposure to COPCs were estimated either quantitatively or qualitatively by

developing several hypothetical exposure pathways. These pathways reflect the potential for exposure to hazardous substances based on the present uses, potential future uses, and location of the Site. The HHRA considered the following receptors and exposure scenarios: on-site facility workers, local residents (children and adults) assumed to use groundwater as drinking water even though it is not currently being used as a drinking water source, and local residents assumed to engage in recreational activities in the Almy or Upper Simmons Reservoirs or assumed to trespass onto the landfill property located within the OU2 Study Area.

Adverse human health effects that may result from exposure to site-related contaminants were evaluated by calculating the non-cancer hazard indices (HIs) and cancer risks (ILCRs) for each receptor. High-end exposure assumptions were selected to assure that the resulting risk estimates would not underestimate risks. Total receptor-specific HIs and ILCRs were compared to EPA benchmarks and acceptable risk limits. None of the calculated HIs exceeded the EPA benchmark. In addition to estimates of HIs and ILCRs, concentrations of contaminants of potential concern (COPCs) in groundwater and surface water were compared to federal and state standards, as was the concentration of lead in soil. Based on the risk estimates and comparisons to these standards, the Remedial Investigation concluded that site-related COPCs present in the OU2 study area media, i.e., groundwater, surface water and sediments, do not pose excess risks based on the exposure scenarios evaluated in this assessment.

Ecological Risk Assessment

An ecological risk assessment (ERA) was performed to address potential impacts that the site contaminants would have on ecological receptors such as fish and birds.

Toxicity tests were performed on surface water and sediment samples from the Upper and Lower Simmons Reservoirs. AVS (Acid Volatile Sulfides) and SEM (Simultaneously Extracted Metals) analyses were

performed for sediment, and on qualitative surveys of the biota (such as fish sampling) in the reservoirs. Based on this data, the ERA demonstrated that there are no significant risks to aquatic biota, and therefore, there are no significant risks of direct toxic effects to fish, or indirect impacts to fish and wildlife that depend on aquatic species for food.

The contaminants that migrated from the OU1 landfill do not appear to pose a significant risk of harm to herons (a species of birds) or to other wildlife that may be exposed to surface water and sediment contaminants through the food web. Also, food web assessments for the American robin (a bird), meadow vole (a mouse-like rodent), and short-tailed shrew (a mouse-like rodent) effectively ruled out the potential for significant risks to wildlife that feed within the wooded areas surrounding the active portions of the landfill property. Finally, there is not a significant risk of harm under future conditions from migration of groundwater contaminants to the Upper Simmons Reservoir.

In summary, because no significant risks to ecological receptors were identified for the OU2 study area, no additional investigations related to ecological risks are warranted.

Typically in the Superfund process, once investigations reveal that a site poses a risk to human health and/or the environment, a feasibility study is conducted to develop alternatives to address those risks and the preferred alternative, along with the other alternatives are presented in a proposed plan for public comment. The ultimate remedy is then presented in a Record of Decision. At sites where investigations reveal that the site does not pose a risk to either human health and/or the environment, alternatives are not developed.

After reviewing and analyzing the information gathered from the OU2 study area, a human health and ecological risk assessment was performed as described above in this section. This risk assessment determined that the OU2 study area presents no current or future risks to human health or the environment. Based on the results of this risk assessment and the 1994 Record of Decision for

OU1 that requires a multi-layer cap over the landfill, a groundwater treatment system for the hot spot, and perpetual monitoring of the landfill and surrounding areas to verify protectiveness, EPA is recommending that no additional action is required for the OU2 study area at this time.

What's a Formal Comment?



During the 30-day formal comment period, EPA will accept formal written comments and hold a hearing to accept formal verbal comments. EPA uses public comments to improve the cleanup proposal.

To make a **formal** comment you need only speak during the public hearing on August 30, 2001 or submit a written comment during the comment period.

Federal regulations require EPA to distinguish between "formal" and "informal" comments. While EPA uses your comments throughout site investigation and cleanup, EPA is **only required to respond in writing to both oral and written comments submitted during the public comment period.** Although, EPA will not respond to your comments during the formal hearing portion on August 30, 2001,

This does not mean that EPA cannot answer questions. Once the meeting moderator announces that the formal hearing portion of the meeting is closed, EPA can respond to informal questions.

After the public comment period closes, EPA will review the transcript of all formal comments received at the hearing, and all written comments received during the formal comment period, before making a final cleanup decision. EPA will then prepare a written response to the all formal written and oral comments received.

Your formal comment will become part of the official public record. The transcript of comments and EPA's written responses will be issued in a document called a Responsiveness Summary when EPA releases the final cleanup decision.



For More Detailed Information

To help the public understand and comment on the proposal for the site, this publication summarizes a number of reports and studies. All of the technical and public information publications prepared to date for the site are available at these Central Landfill Superfund site information repositories:

Marion J. Mohr Memorial Library
One Memorial Drive
Johnston, RI 02919

Phone: 401/231-4980
Hours: Mon-Wed. 9-9
Thurs & Fri. 9 am to 5 pm
Saturday 9am-5pm (fall & winter)

EPA Records Center
One Congress Street
Boston, MA 02114
(617) 918-1440

By appointment:
Hours: 9am-5pm



What impacts would this have on the local community?

There are no impacts to the community from this no action proposal. EPA believes the community is protected through the remedial activities outlined in OU1 including institutional controls prohibiting groundwater use and development of lands on site and proximately located near the landfill along with continued monitoring of these areas.

Why does EPA recommend this Proposed Plan?

The EPA recommends that no additional cleanup measures be done at this Site because the risk assessment in the OU2 study area reveals that there is no significant threat to public health or the environment from sediments, surface water or groundwater beyond the edge of the waste management area.

During the upcoming public comment period, EPA welcomes your comments on the proposed plan. Changes to the preferred alternative may be made if public comments or additional data indicate that such a change would result in a more appropriate solution.

Next Steps...

In late September, the EPA expects to have reviewed all comments and signed the Record of Decision document describing the chosen cleanup plan. The Record of Decision and a summary of responses to public comments will then be made available to the public at the site information repository library and at the EPA Records Center in Boston. The EPA will announce the decision through the local news media and the community mailing list.

Central Landfill Site History

1955-1980 Site owned and operated as a waste disposal facility by Sylvestri Brothers

1978-1979 Earliest known disposal of hazardous materials (reportedly 1.5 million gallons)

1982 Hazardous Waste Disposal area closed

1984 US EPA orders a site characterization

1986 Geohydrologic study conducted

1986 154-acre portion of the Central Landfill site is placed on the Superfund National Priorities List for cleanup

1987 The EPA and Rhode Islands Resource Recovery Corporation entered into an Administrative Order on Consent (AOC) for a Remedial Investigation/ Feasibility Study of the hazardous waste area

1994 EPA issued a proposed plan for cleanup remedy in the hazardous waste disposal area

1994 EPA holds public meeting and hearing and comment period on proposed alternative

1994 EPA issues a Record of Decision (ROD) for the cleanup of hazardous waste disposal area

1994 Remedial Investigation of off-site groundwater begins pursuant to an amended AOC.

1996 RIRRC signs a consent decree with EPA to implement the 1994 ROD.

1998 Construction of the landfill cap on the 121-acre area of the landfill begins

2001 EPA holds informational public meetings on groundwater investigations in Johnston, Scituate and Cranston

2001 Remedial Investigation finalized for study of impacts of landfill contaminants on off-site groundwater, surface water and wetlands

2001 EPA proposes no additional response action for the OU2 study area and issues Proposed Plan

