

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I
ONE CONGRESS STREET, BOSTON, MA 02114-2023**

MEMORANDUM

DATE: September 23, 1999

SUBJ: ACTION MEMORANDUM: Request for a Non-Time-Critical Removal Action at Operable Unit #5 (Shore Road) of the Raymark Industries, Inc. Superfund Site, Stratford, Connecticut

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TO: Patricia Meaney, Director
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CERCLIS ID#: CTD001186618

SITE ID#: 01H3

I. PURPOSE

This Action Memorandum requests and documents your approval of a ceiling increase and an amendment to the scope of Removal Actions taken at the Raymark Industries Inc. Sites, Stratford, Fairfield County, Connecticut. Approval and authorization are hereby requested for a \$5,187,179 increase in the extramural ceiling. This increase raises the total Site ceiling from \$50,259,216 to \$55,446,395. This ceiling increase and change in scope is necessary to conduct a Non-Time-Critical Removal Action (NTCRA) for Operable Unit #5 (Shore Road) of the Raymark Industries Inc. Superfund Site ("the Site") (See Attachment #1, Figure 1-1). The selected removal action is expected to be completed within 9-10 months of mobilization and will require approximately \$5.2 million in extramural funding.

The overall objective of the NTCRA is to prevent, to the extent practicable, continuing contamination from the soil, groundwater, and sediments at Operable Unit #5 (Shore Road) and

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to protect current and future users of the area, as well as ecological receptors. This will be accomplished by excavating and potentially treating contaminated soils, backfilling a portion of the treated soils on-site, and temporarily storing excess soils at a location within the town of Stratford until a permanent in-town location is selected. However, if pilot scale testing of soils finds soil treatment to be infeasible or if a suitable location for temporary and permanent storage of excess soils cannot be found, the contamination will be capped in place. The approach is presented in Section VI, PROPOSED ACTIONS AND ESTIMATED COSTS, of this memorandum.

The selected approach will consist of addressing approximately 35,000 cubic yards of fill believed to have originated from the manufacturing processes of Raymark Industries, Inc. and disposed in a salt marsh along the Housatonic River. This area now consists of a road, a parking area, and the grounds of a boat club (See Attachment #1, Figure 1-5a). As part of the response action, the area will be returned to preconstruction conditions as much as possible. This NTCRA will be performed by EPA using fund money as no PRP is available to implement the response action in a timely manner.

This Action Memorandum does not include a request to fund any Post-Removal Site Control (PRSC) activities. The State of Connecticut and/or property owners will finance PRSC activities which will include, at a minimum, the oversight and enforcement of current and future land use restrictions. If a capping Alternative is implemented, the State of Connecticut and/or property owners will also finance all long term operational and maintenance (O&M) activities associated with cap maintenance.

The remedial program, as part of a Record of Decision (ROD), will determine the need for any additional long-term operation and maintenance activities. The NTCRA, however, is expected to be the final remedy for this OU and no further PRSCs beyond land use restrictions and potentially cap maintenance are anticipated. Groundwater throughout the Site, including groundwater beneath OU5 (Shore Road), will be addressed in the future as a separate operable unit.

This NTCRA will ensure that EPA can provide a timely response to effectively minimize threats to public health or welfare or the environment which may result from the continuing release and/or threat of release of hazardous substances at and from OU5 (Shore Road), and is consistent with EPA's Superfund Accelerated Cleanup Model (SACM).

While this NTCRA will accelerate the cleanup of OU5 (Shore Road), it does not constitute the complete and final cleanup plan for the Raymark Industries Superfund Site or for this OU. The ROD which will be developed for this OU will define the levels of contaminant reduction necessary for long-term public health and environmental protection and will evaluate whether the

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completed NTCRA meets those requirements. There are also an additional six active operable units at the Site, all of which are in the RI/FS development stage. EPA anticipates the need for further excavations at four of these OUs, capping an area that may receive excavated materials as another OU, and a Site-wide groundwater investigation/clean-up of the entire area as the last OU.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

CERCLIS ID No.:	CTD001186618
Site ID. No.:	01H3
Category	Non-time-critical

1. Removal Site Evaluation (OU5-Shore Road)

In 1993 and 1994 preliminary evaluations of surface and subsurface soils within OU5 (Shore Road) were conducted by EPA and the CTDEP. Based on the results of those sampling events and due to threats to potential human health and the environment posed by on-site hazardous substances, CTDEP performed an interim removal action consisting of capping the area with a geotextile, then covering the geotextile with six inches of wood chips. This temporary capping, completed in 1994, was intended to be an interim measure and is still in place today.

In 1995 EPA listed the Site on the National Priorities List (NPL). While EPA continued work at other operable units under both the removal and remedial programs, no further actions were taken at OU5 (Shore Road). In January 1999, the Town of Stratford asked EPA to inspect the interim cap as portions of the geotextile were reportedly exposed. EPA did inspect the area and found the wood chips to be missing in several locations and the temporary cap to be failing due to weather and general use of the area. On January 22, 1999, EPA approved the initiation of an Engineering Evaluation/Cost Analysis (EE/CA) to assess various options for controlling and containing the source of contamination within OU5 (Shore Road) (see Attachment #2, EE/CA Approval Memorandum). In March 1999, EPA performed an additional soil investigation to better characterize the nature and extent of the contamination within the area. Based upon the results of this most recent investigation, hazardous substances were found at or very near the surface of the area, including directly beneath the failing asphalt surface of Shore Road. These hazardous substances present unacceptable risks to human health and the environment.

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The Site was proposed for addition to the NPL on January 18, 1994 and was finalized on April 25, 1995.

2. Physical Location and Site History

The former Raymark Industries, Inc. Facility was located at 75 East Main Street in Stratford, Fairfield County, Connecticut. From 1919 until September 1989, Raymark manufactured automotive and heavy brake friction components using asbestos, lead, copper, and a variety of adhesives and resins. As a result of manufacturing and waste disposal practices, soils at the Raymark Facility became contaminated with asbestos, lead, copper, PCBs and other contaminants. Wastes produced as a result of manufacturing processes were routinely disposed of at the Raymark Facility to fill low lying areas which created additional space for Raymark Facility expansion. It was also common practice, however, for the company to give away its excess manufacturing wastes for use as fill within the Town of Stratford. OU5 (Shore Road) is one of the areas that received waste from the Raymark Facility.

OU5 (Shore Road) is located south of the former Raymark Facility. The entire area of OU5 (Shore Road) was once a salt meadow marsh that bordered the Housatonic River. This area received fill from Raymark as well as from other sources from approximately 1955 through 1970. Salt meadow marshes that abut the area to the north and south, outside of what is defined as OU5 (Shore Road), are portions of the original marsh that were not filled. The extent of fill has completely displaced the channel of a nearby surface water body, Ferry Creek. A road through the area and the parking lot and grounds of the Housatonic Boat Club, a commercial/ recreational area located within OU5 (Shore Road), have been completely built on fill, and are bordered by the Housatonic River to the east. (See Attachment #1, Figure 1-5a).

The area of OU5 (Shore Road) is approximately four acres. Its use is primarily commercial and recreational, however, several residences are located along the northern end of Shore Road. Both residential and commercial properties are located within or adjacent to the area of contamination. The nearest residential property is approximately 50 feet from the edge of the area to be excavated. Except for a gate used by the Housatonic Boat Club to limit access to members, the area of OU5 (Shore Road) is unrestricted.

The Town of Stratford is a suburban community with approximately 50,000 residents. All water is supplied by the Town's public water system. The State of Connecticut has

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evaluated the use and value of groundwater in the area and has provided a preliminary determination of a low overall rating based on the availability of publicly supplied water from other locations, the fact that there are no current groundwater users, and the unlikelihood of future groundwater users.

Eight operable units have been identified at the Site and are described in Attachment #1, Table #1. In total, the Raymark Industries Inc., Superfund Site encompasses approximately 700 acres.

3. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

As a result of filling operations at OU5 (Shore Road) hazardous substances have come to be released into the environment. Investigations of the area, as further documented below, have detected a variety of hazardous substances in the surface and subsurface soils. In particular, asbestos, lead, PCBs, and dioxins have been detected at concentrations above those acceptable for human and ecological exposure. All of the compounds of concern are "hazardous substances" as defined by CERCLA Section 101(14) and 40 C.F.R. Section 300.5.

The release of the hazardous substances into the environment has resulted in the contamination of soils, groundwater, surface water, and sediments. While no fire or explosion threat is present, significant human health and environmental risks may occur as a result of the hazardous substances found in the area.

4. Nature and Extent of Contamination

A variety of chemicals and metals have been detected in the manufacturing wastes from the former Raymark Industries which has been used as fill at several locations within the Town of Stratford, including in the area of OU5 (Shore Road). The interim capping of the OU5 (Shore Road) area that was completed in 1994 as well as the pavement under Shore Road has been and continues to fail allowing for the potential of dermal, inhalation, and ingestion exposures to contaminants. Further, because the soils in this area are subject to flooding, erosion, and precipitation infiltration, contaminants are mobilized into the environment and cause continuing contamination to the groundwater and to the Housatonic River sediments and surface water. A summary of contaminant presence is presented below and seen in Attachment #1, Figures 1-5b - 1-5i.

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Investigation: As part of the EE/CA, the lateral boundary of the soil-waste/fill at OU5 (Shore Road) was delineated using historical aerial photographs of the area and observations of contaminant presence recorded during soil boring investigations. The vertical depth of soil-waste/fill was estimated using data from the subsurface investigation. Based on field data, it was estimated that the surface area of OU5 (Shore Road) is 170,800 square feet with an average depth of fill of 8 feet. Groundwater at OU5 (Shore Road) was encountered at an average depth of 5.5 feet.

The investigation evaluated surficial soils (0-2 feet) and subsurface soils (2-4 feet). The delineation of contamination was based on the results of soil boring investigations that evaluated lead, asbestos, PCBs, and dioxins. Contamination delineation was based on exceedances of any one of these constituents (See Attachment #2).

Summary of contaminant presence:

Lead: Elevated concentrations of lead (400 - 10,000 ppm) were detected in both the surficial and subsurface soils. Concentrations were typically comparable in both soil layers, however, lead was more laterally dispersed in the surficial soils. The highest concentrations were found within the parking lot of the Housatonic Boat Club and along the shore line of the Housatonic River. Lead contamination was actually used to define the perimeter of the contaminated area as elevated levels of asbestos, PCBs and dioxins were all found within the area of lead contamination. (See Attachment #1, Figures 1-5b & 1-5c).

Asbestos: High concentrations of asbestos were detected in both the surficial and subsurface soil layers. The distribution and magnitude of asbestos within the two soil layers were comparable, encompassing the Housatonic Boat Club parking area and Shore Road at concentrations between 1 and 85 percent asbestos. (See Attachment #1, Figures 1-5d & 1-5e).

PCBs: Elevated levels of PCBs were scattered throughout OU5 (Shore Road). A few samples in both the surface and subsurface exceeded 10 ppm, with the majority between 1 and 10 ppm. Concentrations were comparable between the two soil layers, but somewhat higher in the surficial soils, especially along Shore Road. (See Attachment #1, Figures 1-5f & 1-5g).

Dioxins: Dioxins were detected in both surficial and subsurface soils at comparable levels, but at different locations. Dioxins in surficial soils were primarily found along Shore Road. Dioxins in subsurface soils were found in the parking lot area of the Housatonic Boat Club and along the shore line. All locations, both surficial and

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subsurface, are within the area defined by high lead concentrations. (See Attachment #1, Figure 1-5h & 1-5i).

5. NPL Status

The Site was proposed for inclusion on the National Priorities List (NPL) on January 18, 1994 (59 Fed. Reg. 2572) and was listed on the NPL on April 25, 1995 (60 Fed Reg. 20330). The Agency for Toxic Substances and Disease Registry (ATSDR) issued a Preliminary Health Advisory in 1993 (See Attachment #3) for locations around the Town of Stratford where Raymark waste had come to be located. ATSDR also performed a Public Health Assessment for the Site in 1996. EPA plans to initiate removal actions at OU5 (Shore Road) in the Fall of 1999. A ROD for this operable unit is anticipated for the Fall of 2000.

6. Maps, Pictures and Other Graphic Representations

Please see the following:

Attachment 1 - Figures and Tables

Attachment 2 - EE/CA Approval Memo

B. Other Actions to Date

1. Previous Actions

Site Wide: There have been extensive removal and remedial actions performed at the Raymark Site since 1992 (See Attachment #8- Previous Removal Action Memoranda). These actions, both removal and remedial, have included the following activities:

- Surface Water Investigations and Sediment Sampling
- Geological Investigation
- Hydrogeological Investigations
- Soil Investigations
- Tidal Studies
- Human Receptor Population Survey
- Building Investigations
- Toluene Waste Pile Investigation

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- Lagoon Investigation, Including RCRA Closeout Activities
- Drainage System Investigations
- Tank Investigations
- Air Monitoring
- Consolidation of Waste from Satellite Locations

OU5 (Shore Road): Preliminary evaluations of surface and subsurface soils within OU5 (Shore Road) were conducted by EPA and the CTDEP in 1993 and 1994. Sampling results found potential threats to human health and the environment posed by on-site hazardous substances. CTDEP performed an interim removal action consisting of capping the area with a geotextile, then covering the geotextile with six inches of wood chips. This interim capping measure was completed in 1994.

2. Current Actions

To address the primary source of contamination in the soils, groundwater, surface water, and sediments of the Housatonic River, EPA completed an EE/CA in June 1999 to support a NTCRA (see EE/CA Approval Memorandum, Attachment #2). In response to comments received at a public meeting held on July 14, 1999, EPA developed an addendum to the EE/CA (July 1999) that considered an additional alternative for clean-up actions. The EE/CA and addendum evaluated various response actions to control the source of contamination at OU5 (Shore Road) based upon cost, effectiveness, and implementability. The EE/CA was completed by an EPA contractor under EPA oversight.

The EE/CA Report and addendum were placed into the Site file in July 1999. EPA mailed copies of the EE/CA Fact Sheet describing the proposed NTCRA to the State of Connecticut (including both state and federal representatives), local officials, local residents, and other interested parties. EPA published a notice of the proposed NTCRA and of public meetings in two newspapers of general circulation in the Site area. EPA held a public informational meeting on July 14, 1999 to present the EE/CA and EPA's preferred alternative (Alternative #3 - excavation, see EE/CA Fact Sheet, Attachment #5) and held a public hearing on August 5, 1999. The public comment period began on July 15, 1999 and ended on September 14, 1999 after a four week extension.

EPA received over **1,100 written comments** on the EE/CA and the proposed alternative. Because of the public concerns raised, EPA's preferred approach is a combination of excavation (Alternative #3) and capping (Alternative #4) and also includes soil treatment. However, if pilot scale testing of soils finds soil treatment to be infeasible or if a suitable location for temporary and permanent storage of excess soils cannot be

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found, the contamination will be capped in place. The criteria for response selection is presented in Section VI of this memorandum.

The selected approach will not be a final remedy for OU5 (Shore Road) as EPA will select a final remedial action for OU5 (Shore Road) in a ROD, scheduled for fiscal year 2000. The ROD will define the levels of contaminant reduction which are necessary for long-term public health and environmental protection. The ROD will also define what specific steps, if any, are necessary to address any contamination remaining after the NTCRA is complete. The NTCRA, however, is expected to be the final action required for this OU and will be consistent with the long-term remedial response for this area. Groundwater throughout the Site, including groundwater beneath OU5 (Shore Road), will be addressed as a separate operable unit.

C. State and Local Authorities' Role

1. State and Local Actions to Date

The State of Connecticut has performed various response actions at the Site. The State supported the inclusion of the Site on the NPL and has since reviewed and commented on various removal and remedial actions that have taken place. EPA has consulted with the State regarding the performance of a NTCRA at OU5 (Shore Road) and the State has indicated its full support of the selected approach.

Local authorities have been actively involved in the Site. The Town of Stratford also supports an expedited approach to the OU5 (Shore Road) area and is also supportive of the selected approach.

2. Potential for Continued State/Local Response

The State and local authorities are expected to maintain a high level of interest in the Raymark Site. The State is expected to review and comment on all other activities at various operable units as well as final selections of remedial alternatives. For OU5 (Shore Road), the State is expected to participate in the implementation of all post-removal site control measures associated with the selected NTCRA.

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**III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT,
AND STATUTORY AND REGULATORY AUTHORITIES**

A. Regulatory Factors for Appropriateness of the Removal Action

Section 300.415(b)(2) of the NCP lists a number of factors for EPA to consider in determining whether a removal action is appropriate, including:

- * (i) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- * (iv) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
- * (v) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released, and;
- * (vii) the availability of other appropriate federal or state response mechanisms to respond to the release.

An evaluation of the conditions at OU5 (Shore Road) concluded that the above listed factors are applicable as described below.

(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants - There is both the current and future potential for direct human exposure to contaminants in soils along and beneath Shore Road as well as the area surrounding the Housatonic Boat Club. All of these areas have been documented to be contaminated with lead, asbestos, PCBs, and dioxins. While past measures were taken to prevent access to the soils, weather and use of the area have compromised the interim capping efforts. There is, therefore, a current and future potential for human exposure through direct contact, ingestion, and inhalation of soil, as well as the potential for ecological impacts.

(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate - Soil investigations completed in 1993-1994, and again in 1999 have found asbestos, lead, PCBs, and dioxins at levels that would potentially pose a risk to human health and the environment. A risk screening was completed using surface soil data which found unacceptable levels of lead and asbestos. In areas where the interim cap has been compromised, this surface soil is subject to movement via surface water runoff and air transport. Because of this, there is currently a

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potential for pollutant migration.

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released - Shore Road and the area surrounding the Housatonic Boat Club building are within the 100 year flood zone. There have been numerous occurrences of flooding in both of these areas. Precipitation is also believed to have the ability to mobilize contaminants where releases could reach the Housatonic River during flooding and rainstorm events. A risk assessment currently underway for a separate operable unit at the Site found elevated levels of Site related contamination in both river sediments and in crab tissue. The Housatonic River is utilized for fishing and recreational boating.

(vii) The availability of other appropriate federal or state response mechanisms to respond to the release - There are no other known federal or state funds or response mechanisms available to finance this action. The Town of Stratford has requested that an action be taken in the Shore Road/ Housatonic Boat Club area to address the potential of contaminant exposure for both current use as well as for future redevelopment and reuse plans. CTDEP concurs with the Town's request for an action.

Consequently, based upon the NCP factors listed and described above, a potential threat exists to public health or welfare or the environment. A removal action was therefore approved to abate, prevent, minimize, stabilize, mitigate, or eliminate such threat(s). In particular, a removal action was approved to control and contain the release of hazardous substances from OU5 (Shore Road) through source control measures.

B. Risk Screening

As part of the initial human health risk screening for OU5 (Shore Road) available data was evaluated to assess potential human health risks that could result from exposure to contaminants in soils. This initial screening evaluated the following exposure pathways for surface soils:

- Current and future commercial workers
- Current and future adult recreational users
- Current and future older children users

The results of the streamlined risk evaluation (Appendix A of the EE/CA) are presented

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on Table 1-1 and 1-2 of the EE/CA. This screening found concentrations of lead and asbestos at levels above what are considered safe for human health exposure.

As part of the EE/CA, additional soil investigations were performed to further define both the horizontal and vertical extent of contamination. The results of these additional investigations confirmed the presence of elevated levels of lead, asbestos, PCBs, and dioxins.

Maximum lead concentrations were compared to residential lead screening concentrations. The lead concentrations in the surface soils substantially exceed the lead benchmarks noted in OSWER Directive #9355.4-12 (400 ppm). The average lead concentration is 3,900 ppm with many areas exceeding 10,000 ppm.

Asbestos cannot be evaluated by traditional risk assessment guidance. However, EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos requires that any asbestos containing material be covered according to 40 CFR § 61.151(a)(3). Asbestos has been found in surface soils at concentrations ranging from 1 to 85%. The presence of asbestos at such elevated concentrations indicate the potential for significant adverse health effects.

PCBs and dioxins were not evaluated further beyond the initial risk screening (Appendix A of the EE/CA). This screening found total carcinogenic risk to be 1×10^{-5} .

Based on the results of the risk evaluation, it was determined that the surface soils within OU5 (Shore Road) pose an unacceptable risk to human health due to lead and asbestos concentrations and should be addressed.

C. Preliminary Removal Goals

A set of preliminary removal goals (PRGs) relevant to the proposed removal action were developed for soils at OU5 (Shore Road).¹ Protection of human health and the environment can be achieved once a response action has addressed environmental media that contain contaminants in excess of PRGs. PRGs may be developed on a site-specific basis, if there are sufficient analytical data available. Otherwise, available default

¹ PRGs were not developed for groundwater, for the Housatonic River sediments, and surface water, or for protection of ecological receptors because these are not part of operable unit 5 (Shore Road). These contaminated media will be further evaluated under separate operable units in a more comprehensive remedial investigation and will, as deemed necessary, be addressed under a future remedial action.

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screening criteria, regulatory standards, or guidances are acceptable methods for establishing PRGs that are consistent with the purpose of a NTCRA. Only risk-based PRGs and numerical limits dictated by EPA policy were selected for use in the EE/CA. For this NTCRA, soil PRGs were specifically developed based on protecting human health from direct contact exposures.² PRGs for selected contaminants of concern were used to develop volume estimates for the Site's contaminated media. Attachment #1, Table #2 presents the list of selected PRGs and the basis for the selection of each.

The maximum lead concentrations in the soils exceed the lead benchmark for residential exposure of 400 ppm set by OSWER Directive #9355.4-12. Therefore, the PRG for lead in soil has been set at 400 ppm.

Asbestos was found in soils at levels up to 85%. EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos requires that asbestos containing material (defined as 1% asbestos or greater) be covered according to 40 CFR § 61.151(a)(3). Therefore, the PRG for asbestos in soil has been set at < 1%.

Cleanup standards for PCBs in soils are found in 40 CFR §761.61 which require a cleanup level of ≤ 1 ppm in high occupancy areas. Maximum concentrations of PCBs were found to be 119 ppm. Therefore, the PRG for PCBs in soil is ≤ 1 ppm.

EPA's, Approaches for Addressing Dioxins in Soil at CERCLA and RCRA Sites, OSWER Directive 9200.4-26 (April 13, 1998), was taken into consideration in developing preliminary remediation goals for dioxin. A preliminary remediation goal of 1 ug/kg (ppb) of dioxin (as 2,3,7,8-TCDD TE) was established in areas where exposure to commercial workers to soils could reasonably be expected.

As documented in the EE/CA, a final cleanup level of 1 ug/kg (ppb) of dioxin (as 2,3,7,8-TCDD TE) was established for soils based on an evaluation of a range of cleanup alternatives using EPA's nine remedy selection criteria. This final cleanup level is considered protective for human health and environment at the Site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants, or contaminants from OU5

² There are insufficient data to develop soil PRGs for protecting groundwater quality (through leaching). Additional evaluations will be completed during the NTCRA to determine appropriate soil action levels.

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(Shore Road), if not addressed by implementing a response action identified in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Please refer to the June 12, 1993 Action Memorandum Addendum in which statutory limits were waived (See Attachment #8).

The proposed continued response actions, as described in this Action Memorandum, are appropriate and consistent with the remedial action to be taken. The NTCRA approach described in this Action Memorandum will eliminate direct contact exposure to soils for commercial workers as well as adult and older children recreational users. The NTCRA will also mitigate a release of contaminants to the groundwater, and will minimize, to the extent practicable, the source of contaminants to the Housatonic River. The NTCRA is consistent with the type of actions that would be considered as part of the remedial response and does not preclude any future remedial response that may be necessary.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Description of Proposed Actions

Removal Action Objectives: The following removal action objectives have been developed for the Site;

- Prevent direct human contact with contaminants in soil-waste/fill materials.
- Prevent, to the extent practicable, the further release of contaminants from soil-waste/fill materials into the soil, groundwater, surface water, and sediments.
- Prevent, to the extent practicable, the release of contaminants from the soil-waste/fill materials into the soil, groundwater, surface water, and sediments.
- Prevent, to the extent practicable, continued ecological impacts from the release of contaminants from the soil/waste/fill into the Housatonic River and nearby wetlands.

Section 2.4 of the EE/CA presents a preliminary summary of ARARs and other guidances that were considered in developing the removal action objectives and general

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response actions.

Proposed Alternative/Public Acceptance:

To meet the removal action objectives, EPA initially proposed a cleanup plan (Alternative 3 - excavation) to excavate soils from the entire area to groundwater (an average depth of 5.5 feet), backfill the area with clean fill, restore the area to preconstruction conditions, and store the excavated material in town in a temporary storage location until a permanent disposal area was selected and designed. This proposed Alternative was presented at a public meeting on July 14, 1999.

At this July 14, 1999 public meeting, EPA received comments requesting the evaluation of a fourth alternative that considered capping the contamination in place. In response to this request, EPA completed an evaluation of capping and presented the approach as Alternative 4 in a July 29, 1999 addendum to the EE/CA document. This newest Alternative would leave the waste in place, place a RCRA C cap over the entire area along the bank of the Housatonic River, provide subgrade corridors for utility access, raise the entire shoreline area with clean soils approximately 5 feet, and provide vegetative cover for soil stability.

EPA extended the public comment period to September 14, 1999 in an effort to comprehensively solicit comments on all alternatives, but especially the capping alternative which was not formally proposed until July 29, 1999. Both alternatives, (Alternative 3 (excavation) and Alternative 4 (capping)), provide protection of human health and meet CT State ARARs.

EPA received over 1,100 comment letters on the EE/CA and proposed alternative as well as significant verbal comments provided during the public hearing. The results of these comments found over 900 commentors in favor of excavating (Alternative 3) and over 200 commentors favoring capping (Alternative 4). (See Responsiveness Summary, Attachment #6). The issues that were raised over the excavation alternative included primarily safety concerns such as transportation of contaminated materials through town, on-load and off-load controls to prevent contamination from becoming airborne, safe storage concerns, as well as general traffic and noise issues. Issues raised over the capping alternative included concerns of long term effectiveness and permanence when leaving contaminated materials in a flood plain, concerns of impacts to an environmentally sensitive area along the bank of the Housatonic River, and of access to Shore Road after elevating the area 5 feet in order to construct a cap.

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In an effort to address concerns raised during the comment period, EPA has selected an approach that will evaluate a design that combines both excavation and capping. This approach will include excavating and potentially treating contaminated soils, backfilling a portion of the treated soils on-site, and temporarily storing excess soils at a location within the town of Stratford until a permanent in-town location is selected. This combined alternative addresses the public concerns of leaving contamination in a flood plain, minimizes potential impacts to an environmentally sensitive area, addresses safety concerns through soil treatment, and eliminates the need for a cap over the Shore Road as any soil remaining will be have undergone treatment. However, if pilot scale testing of soils finds soil treatment to be infeasible, then Alternative #3 - excavation to 5.5 feet and temporary and permanent storage of excavated materials at an in-town location will be implemented. Finally, if a suitable location for temporary and permanent storage of excess soils cannot be found, then Alternative #4- capping wastes in place, will be implemented.

The major components of the selected approach are explained below:

Site Preparation: Appropriate work areas around OU5 (Shore Road) will be established as necessary, and erosion and sediment controls will be put in place. A fence or other restrictive barrier will be installed around the area. Traffic control measures will be implemented that will include coordinating with the Town of Stratford in the closing of Shore Road. Coordination of truck traffic and space management by the contractor will be necessary.

Pilot Scale Soil Testing/Soil Treatment: Technologies will be evaluated for soil treatment to address contamination. Pilot scale testing will take place either on-site or at an off-site location to determine effectiveness of treatment. Once an effective technology is selected, full scale treatment will commence. EPA may provide notice of treatment selection and seek public comments on the proposed treatment technology for soils.

Soil Excavation: All contaminated soils above the cleanup levels listed in Attachment #1, Table #2 would be excavated to an average depth of 5.5 feet. Excavation would proceed horizontally and vertically until all of the contaminated soils are removed and treated or until the depth of the mean high groundwater level is encountered. The volume of contaminated soil is estimated to be 35,000 cubic yards. Determination of the actual quantities of contaminated soil to be excavated, and the potential need for dewatering, will be evaluated during the removal activities.

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Excavation of contaminated soils would be accomplished using standard excavation equipment, such as a backhoe. Confirmatory samples would be collected to determine the horizontal and vertical extent of excavation. Samples would be analyzed for lead, asbestos, PCBs, and dioxins. Soil removal and testing would continue until the confirmatory samples indicate that the cleanup goals have been met.

Backfilling on-site: If a successful treatment technology is identified, treated soils will be placed back on-site. The volume and location of backfilling will be determined during design. The Shore Road area will be returned to preconstruction conditions, including grade, as much as possible.

Storage location: Excess soils will be transported to a suitable temporary and/or permanent storage location. A temporary storage cell will be designed to contain the transported material. The interim storage location may also receive excavated soils from other operable units at the Raymark Site which may require excavation in the future under the remedial program. The interim storage location may also be the selected permanent storage location for some or all excavated soils for the Raymark Site. If a storage location for excavated soils cannot be found, the contamination will be capped in place. Capping in place will require an extensive design and several geotechnical investigations to determine the potential for long-term effectiveness.

Site Restoration: Once the extent of the excavation has been reached and confirmed, the excavation would be backfilled with treated soil and clean common fill in accordance with the final design. The backfill would be placed, graded, and compacted. Underground utilities servicing the Housatonic Boat Club would be reestablished. The area would be restored to preconstruction conditions which would include seeding to reestablish vegetation, paving for parking areas, and reestablishing erosion control measures (i.e., placement of rip-rap along the river bank).

Because the entire area of OU5 (Shore Road) is located within the 100-year floodplain and is subject to flooding, excavation of the area would be restricted to seasons with low flooding probability (i.e., summer and fall) to reduce potential migration of contaminated soils during excavation activities and to protect on-site workers.

Soils from the banks of Shore Road to the shore line of the Housatonic River would be excavated. Erosion control measures along the riverbank will be necessary during excavation activities to prevent the migration of contaminated soils.³

³ Long-term control measures will be re-evaluated during the Remedial Investigation/Feasibility Study phase of the area and addressed in the future Record of Decision

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Post-removal site measures would include quarterly inspections and maintenance of erosion control measures for a period of 5 years.

B. Contribution to Remedial Performance

The NTCRA described in this document is expected to contribute significantly to the long-term remedial action. The remedial goal for this Site is to protect public health and the environment. More specifically, the remedial response will seek to restore the Site to a condition that will allow for future Site use and minimize any long-term threats to the groundwater and the Housatonic River ecosystem. The NTCRA is consistent with all potential future remedial responses.

The initiation and completion of an RI/FS will focus on the need for additional source control actions beyond the NTCRA to address the need for any additional responses. The NTCRA, however, is expected to be the final action for this OU and no further PRSCs beyond land use restrictions are anticipated. Groundwater throughout the Site, including groundwater beneath OU5 (Shore Road), will be addressed as a separate operable unit.

C. Description of Alternative Technologies

In addition to the NTCRA described above, other general response measures were identified, screened, and analyzed in the EE/CA for potential applicability. These alternative response measures included excavation of contaminated soils to varying depths. Section 3 of the EE/CA describes each of these alternatives in detail.

During the EE/CA process, all of the alternatives were evaluated independently based upon cost, effectiveness, and implementability. Cost was used to assess options of similar effectiveness and implementability. The direct capital, indirect capital, and post-removal site control costs (operation and maintenance) were estimated for each alternative. Effectiveness was based upon the ability of the alternative to meet the removal action objectives. The effectiveness evaluation also involved the assessment of federal and state ARARS, the short-term risks associated with the alternative, timeliness, and the overall protection of human health and the environment. Implementability involved the assessment of constructability and operational issues.

for OU5 (Shore Road).

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

In the EE/CA's independent analysis of each alternative, all of the alternatives were deemed effective in terms of overall protectiveness by reducing potential long-term risks. Alternative 1 (excavation to 2 feet) and Alternative 2 (excavation to 2 feet in some areas and 4 feet in others) do not remove all contaminated soils down to the mean high water table and, therefore, do not comply with the State of Connecticut's Pollutant Mobility Criteria (CTDEP Remediation Standard Regulations Section 22a-133k). These two alternatives would not constitute a permanent measure of cleanup as contaminated materials above the mean high water table would be left in place and would have to be addressed in the final remedy decision in the future.

Alternative 4, capping contaminated soils in place, would reduce contaminant mobility through containment. The State of Connecticut's Pollutant Mobility Criteria would be met, however, the top of the cap will be at or below the 100 year flood level. OU5 (Shore Road) borders the Housatonic River and is subject to tidal influences and coastal storms that could severely impact the integrity of the cap. Costs for long term maintenance of the cap were estimated for 30 years in the EE/CA, however, maintenance requirements would continue indefinitely. CTDEP and/or property owners would be responsible for long term maintenance. Should a major cap failure occur in the future, CTDEP would request that EPA perform the repairs.

Alternative 3, excavation to 5.5 feet, was EPA's preferred Alternative prior to the public comment process. Alternative 3 met the removal objectives and would be permanently protective of human health and the environment. Contaminant mobility would be reduced by excavating the area which is in a flood plain and long term containment of the contaminated soils would be found at an in-town location. Alternative 3 would comply with applicable or relevant and appropriate federal and state standards. The costs associated with excavation to 5.5 feet were comparable to capping in place without the need for indefinite maintenance of a cap.

The selected approach includes all the components of Alternative 3 as well as the treatment of soils. A portion of Alternative 4 is also included in the selected approach as the amount of material requiring off-site transport will be minimized by backfilling treated soils on-site and all transported materials may potentially be stabilized, thereby addressing public health concerns. This combined approach fully satisfies all of the criteria noted above, is responsive to public comments, and provides the best balance of the evaluation criteria. Please note that EPA may provide notice of the selected soil treatment technology and seek public comments on the proposed approach prior to full scale treatment.

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

See the EE/CA for a more detailed presentation of the cost and the basic components of each alternative.

D. EE/CA

Attachment #2 is the EE/CA Approval Memorandum, Attachment #5 is the EE/CA Fact Sheet (EPA's Proposed Plan), and Attachment #6 is EPA's Response to Comments on the EE/CA, the addendum, and the EE/CA Fact Sheet. The EE/CA Report and addendum are found in the Administrative Record for the Site, which is Attachment #7.

E. Applicable or Relevant and Appropriate Requirements

Throughout the EE/CA process, EPA has evaluated the universe of federal and state ARARs which are within the scope of this NTCRA. Attachment #4 is a list of all such ARARS. EPA has determined that the selected NTCRA will be designed, constructed, operated, and maintained to attain all of the identified ARARS, in accordance with 40 C.F.R. § 300.415(j).

F. Project Schedule

Upon the signature of the Director of the Office of Site Remediation and Restoration of this Action Memorandum, EPA intends to implement the NTCRA with federal funds in 1999. The NTCRA construction activities are anticipated to be completed in FY 2000. An RI/FS will be conducted concurrently with the NTCRA and is expected to be completed by the summer of 2000, with the Record of Decision planned in late 2000. The NTCRA, however, is expected to be the final action for this OU and no further PRSCs beyond land use restrictions and potentially cap maintenance are anticipated. Groundwater throughout the Site, including groundwater beneath OU5 (Shore Road), will be addressed as a separate operable unit.

EPA is also in the process of developing RI/FSs for six other operable units at the Raymark Site to evaluate those portions of the Site not addressed by this NTCRA. The RI/FS for OU5 (Shore Road) will also be implemented by EPA, as no financially viable PRPs have been identified at the Site.

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

G. Estimated Costs

The total estimated capital and operation and maintenance costs associated with the selected approach are as follows:

Capital Costs	\$4,286,925
20% Contingency Factor on Capital Costs	\$ 857,385
1% Engineering Contingency Factor on Capital Costs	\$ 42,869
Total <u>Removal</u> Costs	\$5,187,179
Long Term O&M Costs (5 yrs) ⁴	\$ 24,783
<u>Total Costs</u>	<u>\$5,288,793</u>

**VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED
OR NOT TAKEN**

If the NTCRA is not implemented, the potential for lead and asbestos exposures will increase as the pavement of Shore Road continues to break apart and the interim cap placed on the ground of the Housatonic Boat Club and beyond continues to fail. Leaching from the soils into the groundwater will continue to contribute to groundwater contamination and the contamination in the surface and subsurface soils will continue to represent a threat to the ecosystem of the Housatonic River. If EPA were to delay a response then further exposures to human health and further degradation of the environment will result.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues at this Site. The actions addressed in this memorandum to

⁴ The estimated cost to perform 5 years of post-removal operation and maintenance activities is \$24,783. A discount rate of 7 % was used to estimate costs.

ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc. Superfund Site - September 23, 1999

address contaminants at the source area at OU5 (Shore Road) are entirely consistent with national and regional practices. The regional case team has consulted with headquarters regarding all aspects of the NTCRA. Headquarters is supportive of the NTCRA.

IX ENFORCEMENT

EPA has sent an information request to the Housatonic Boat Club, a non-profit entity. In addition, EPA has sued Raymark Industries for past and future cleanup costs for the entire Site. In August 1998, a Connecticut federal district court ordered that the Raymark Facility property be sold and certain proceeds paid to the U.S. The U.S. may also pursue Raymark's insurers.

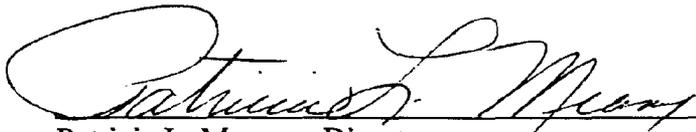
X. RECOMMENDATION

This decision document represents the preferred removal action for OU5 (Shore Road) at the Raymark Industries, Inc. Superfund Site, in Stratford, Fairfield County, Connecticut. It has been developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site.

Conditions at the Site meet the NCP criteria for a removal action as specified at 40 C.F.R. § 300.415(b)(2). The total project ceiling for the NTCRA described in this Action Memorandum is \$50,259,216. If approved, the new Site project ceiling for all removals at the Site would be increased to \$55,446,395.

We recommend your approval of the proposed removal action.

Approve X Disapprove _____


Patricia L. Meaney, Director
Office of Site Remediation and Restoration

Date: 9/23/99

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Raymark Industries, Inc. Superfund Site - Action Memorandum

List of Attachments

Attachment 1 - Figures and Tables

Attachment 2 - EE/CA Approval Memo

Attachment 3 - ATSDR Public Health Advisory

Attachment 4 - ARAR Tables

Attachment 5 - EE/CA Fact Sheet (Proposed Plan)

Attachment 6 - Response to Comments

Attachment 7- Administrative Record Index

Attachment 8- Previous Removal Action Memoranda

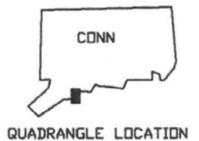
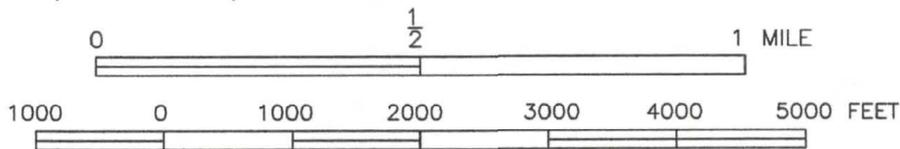
Attachment 9 - State Concurrence with NTCRA

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 1 - Figures and Tables



BASEMAP: PORTIONS OF THE FOLLOWING U.S.G.S. QUADRANGLE MAPS: BRIDGEPORT, CONN., 1970 (PHOTOREVISED: 1984) AND MILFORD, CONN., 1960 (PHOTOREVISED: 1984), SCALE ALTERED FOR CLARITY



SITE LOCUS - RAYMARK - SHORE ROAD
 ENGINEERING EVALUATION / COST ANALYSIS
 STRATFORD, CONNECTICUT

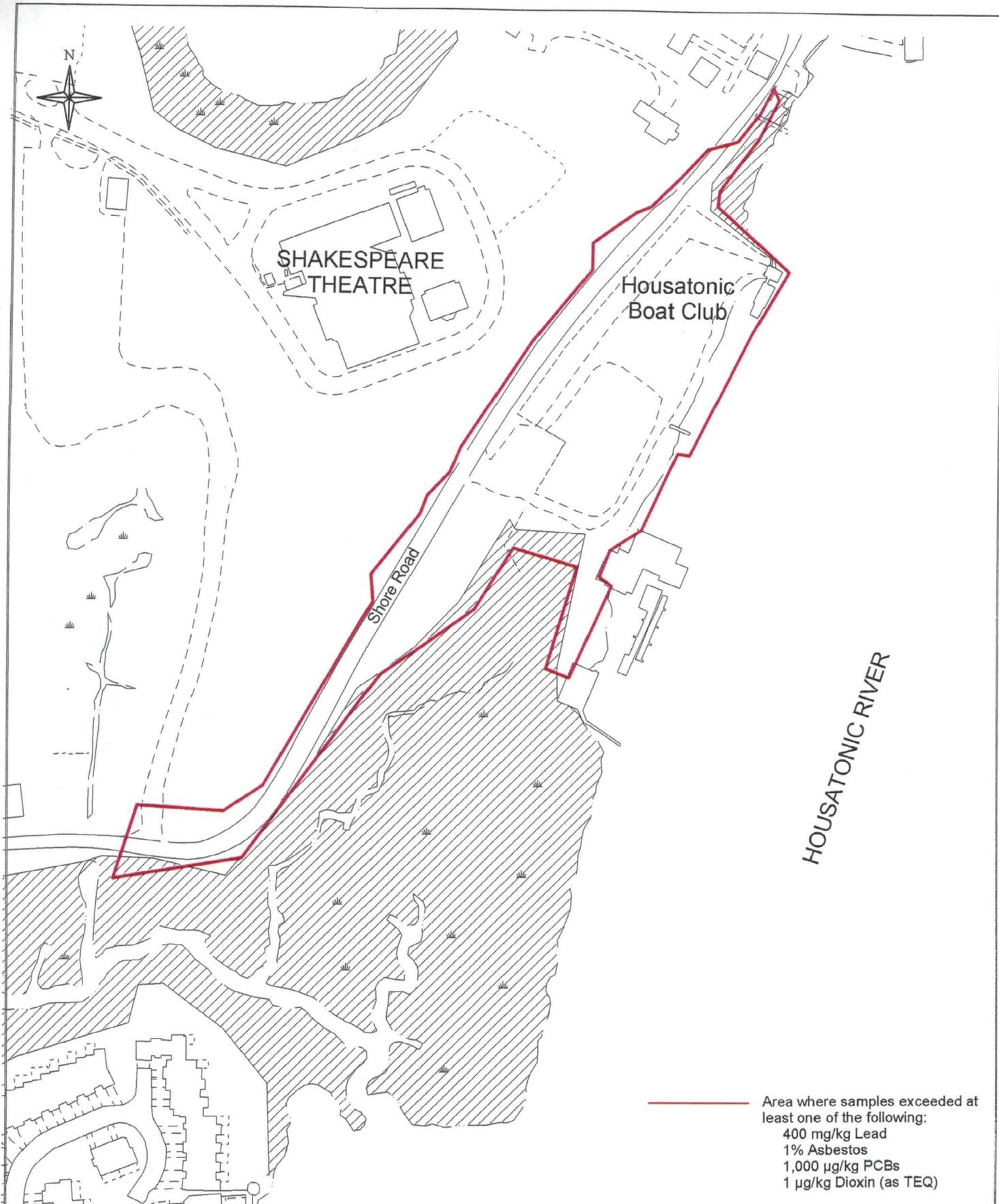
FIGURE 1-1



TETRA TECH NUS, INC.

DRAWN BY: D.W. MACDOUGALL	REV.: 0
PROJECT MANAGER: H. FORD	DATE: JUNE 22, 1999
SCALE: AS SHOWN	ACAD NAME: DWG\RAYMARK\DU4\USGSECA.DWG

55 Jonspin Road Wilmington, MA 01887
 (978)658-7899

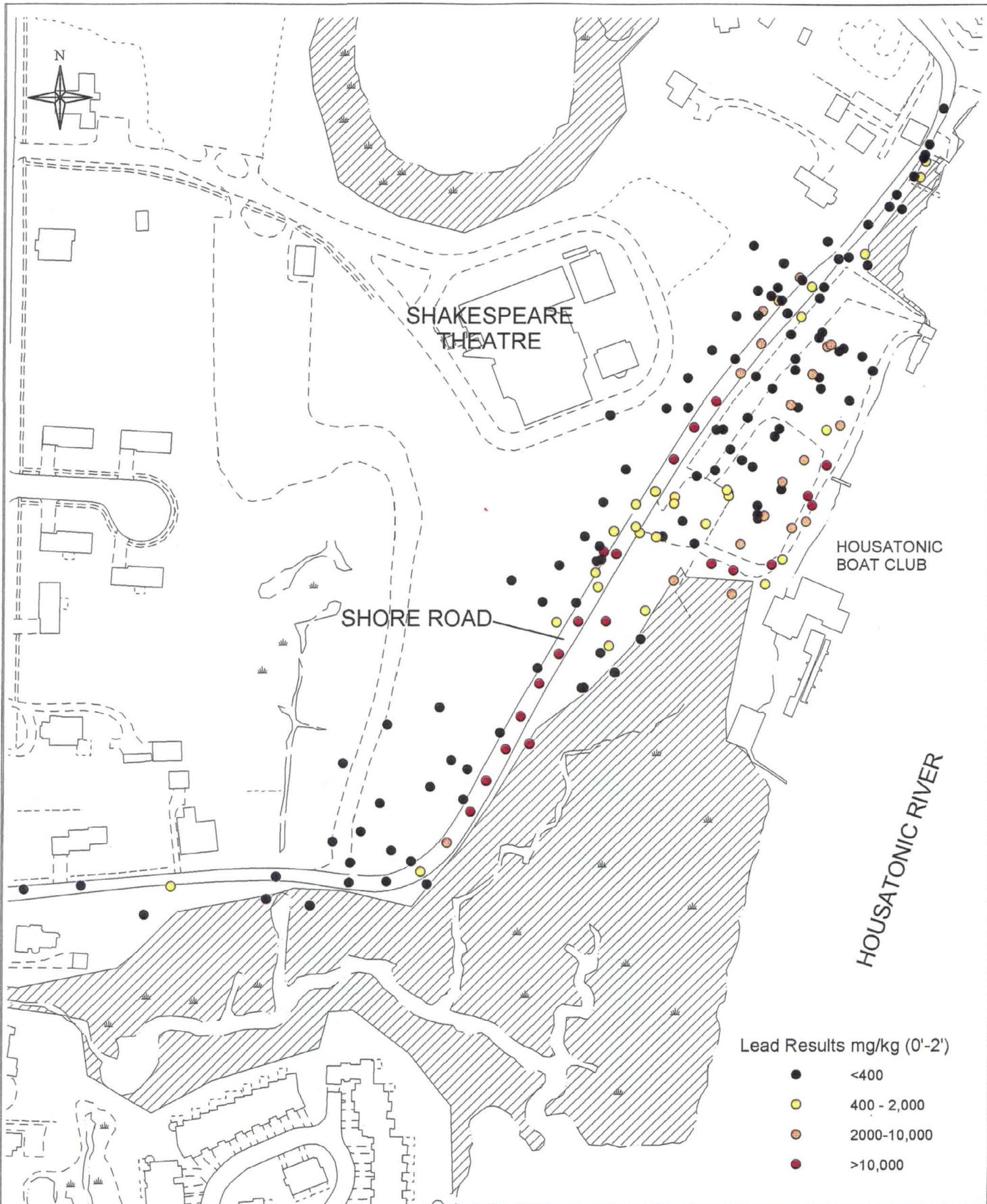


— Area where samples exceeded at least one of the following:
 400 mg/kg Lead
 1% Asbestos
 1,000 µg/kg PCBs
 1 µg/kg Dioxin (as TEQ)

100 0 100 Feet

NOTES:
 1) PLAN NOT TO BE USED FOR DESIGN
 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE

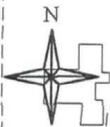
LATERAL EXTENT OF CONTAMINATION		FIGURE 1-5a	
RAYMARK - SHORE ROAD EE/CA		 TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



100 0 100 Feet

- NOTES:
 1) PLAN NOT TO BE USED FOR DESIGN
 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED
 4) SAMPLES FROM 1.5'-2.5' ARE INCLUDED IN THE 0'-2' RANGE

LEAD CONCENTRATIONS (0 ft - 2ft bgs)		FIGURE 1-5b	
RAYMARK - SHORE ROAD EE/CA		TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



SHAKESPEARE
THEATRE

HOUSATONIC
BOAT CLUB

SHORE ROAD

HOUSATONIC RIVER

Lead Results mg/kg (2'-4')

- <400
- 400 - 2,000
- 2,000-10,000
- >10,000

100 0 100 Feet

NOTES:

- 1) PLAN NOT TO BE USED FOR DESIGN
- 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
- 3) IF MULTIPLE RESULTS EXIST FOR ONE BORE-HOLE, THE MAXIMUM RESULT IS DISPLAYED

LEAD CONCENTRATIONS (2 ft - 4ft bgs)

RAYMARK - SHORE ROAD EE/CA

STRATFORD, CONNECTICUT

DRAWN BY: D. A. CHISHOLM

DATE: JUNE 1, 1999

SCALE: AS SHOWN

FILE: ...SHOREROAD.APR

FIGURE 1-5c

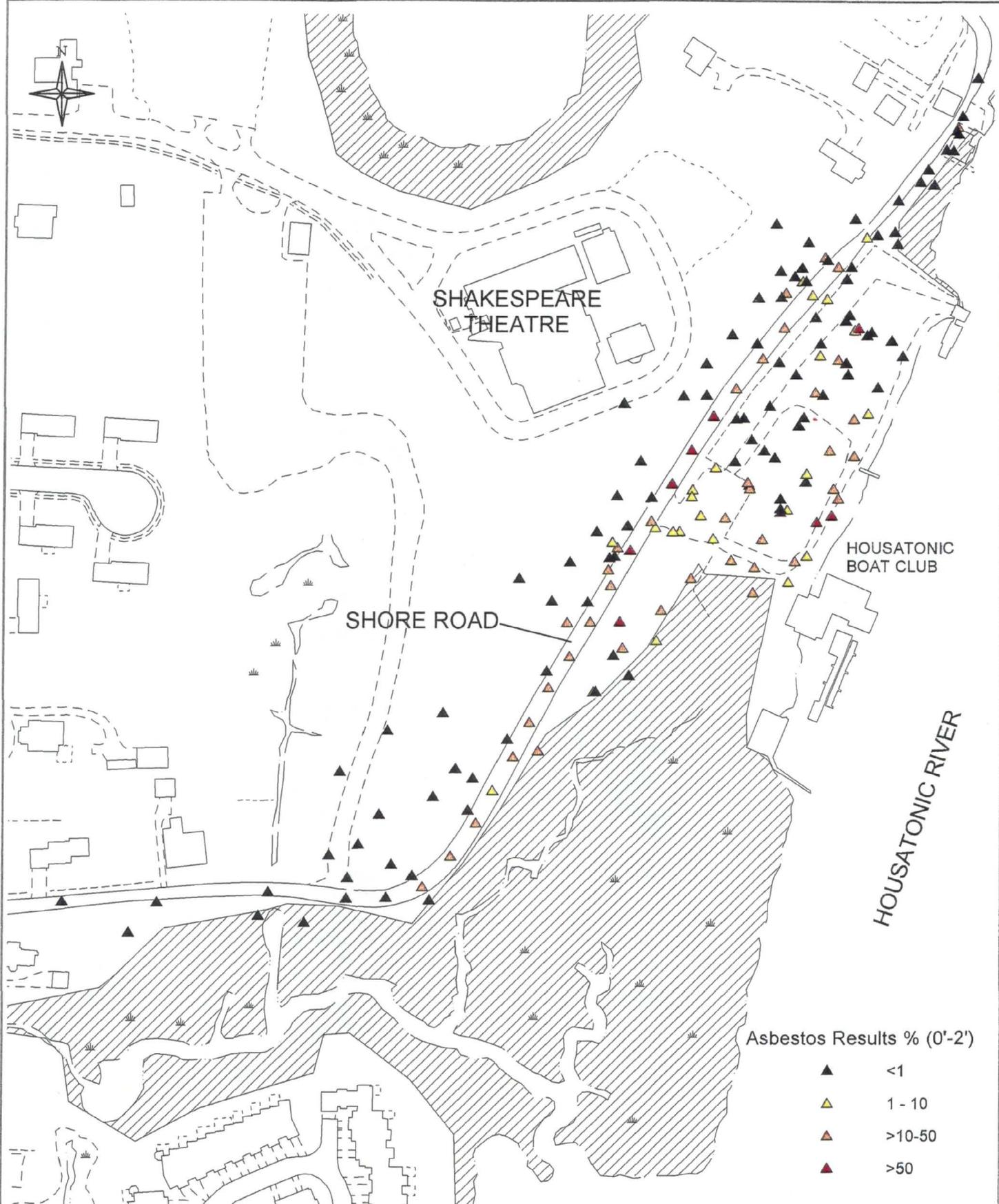


TETRA TECH NUS, INC.

55 JONSPIN ROAD

WILMINGTON, MA 01887

(978)658-7899



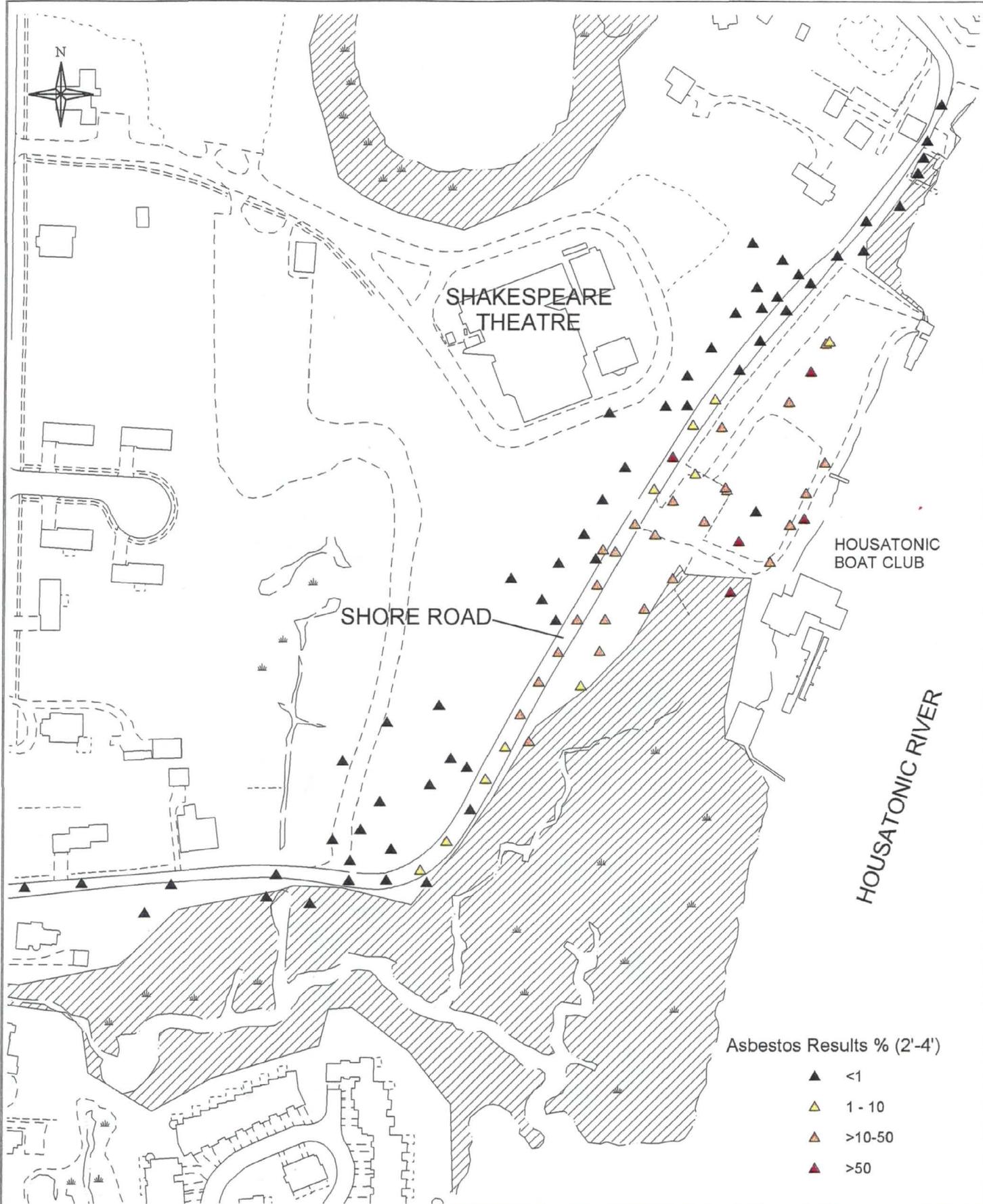
Asbestos Results % (0'-2')

- ▲ <1
- ▲ 1 - 10
- ▲ >10-50
- ▲ >50

100 0 100 Feet

- NOTES:
- 1) PLAN NOT TO BE USED FOR DESIGN
 - 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 - 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED
 - 4) SAMPLES FROM 1.5'-2.5' ARE INCLUDED IN THE 0'-2' RANGE

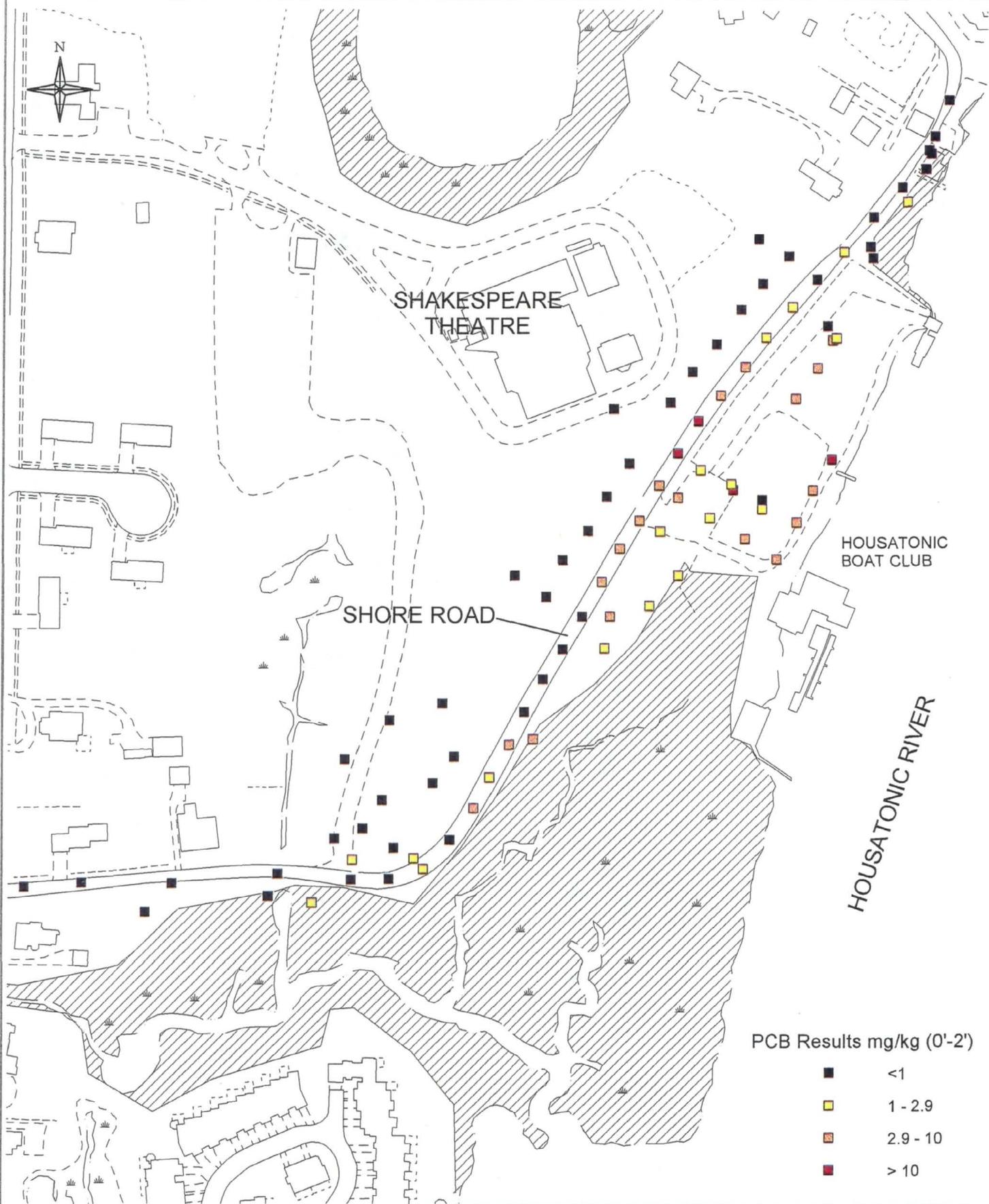
ASBESTOS CONCENTRATIONS (0 ft - 2 ft bgs)		FIGURE 1-5d	
RAYMARK - SHORE ROAD EE/CA		 TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1998	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



100 0 100 Feet

NOTES:
 1) PLAN NOT TO BE USED FOR DESIGN
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 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED

ASBESTOS CONCENTRATIONS (2 ft - 4ft bgs)		FIGURE 1-5e	
RAYMARK - SHORE ROAD EE/CA		 TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



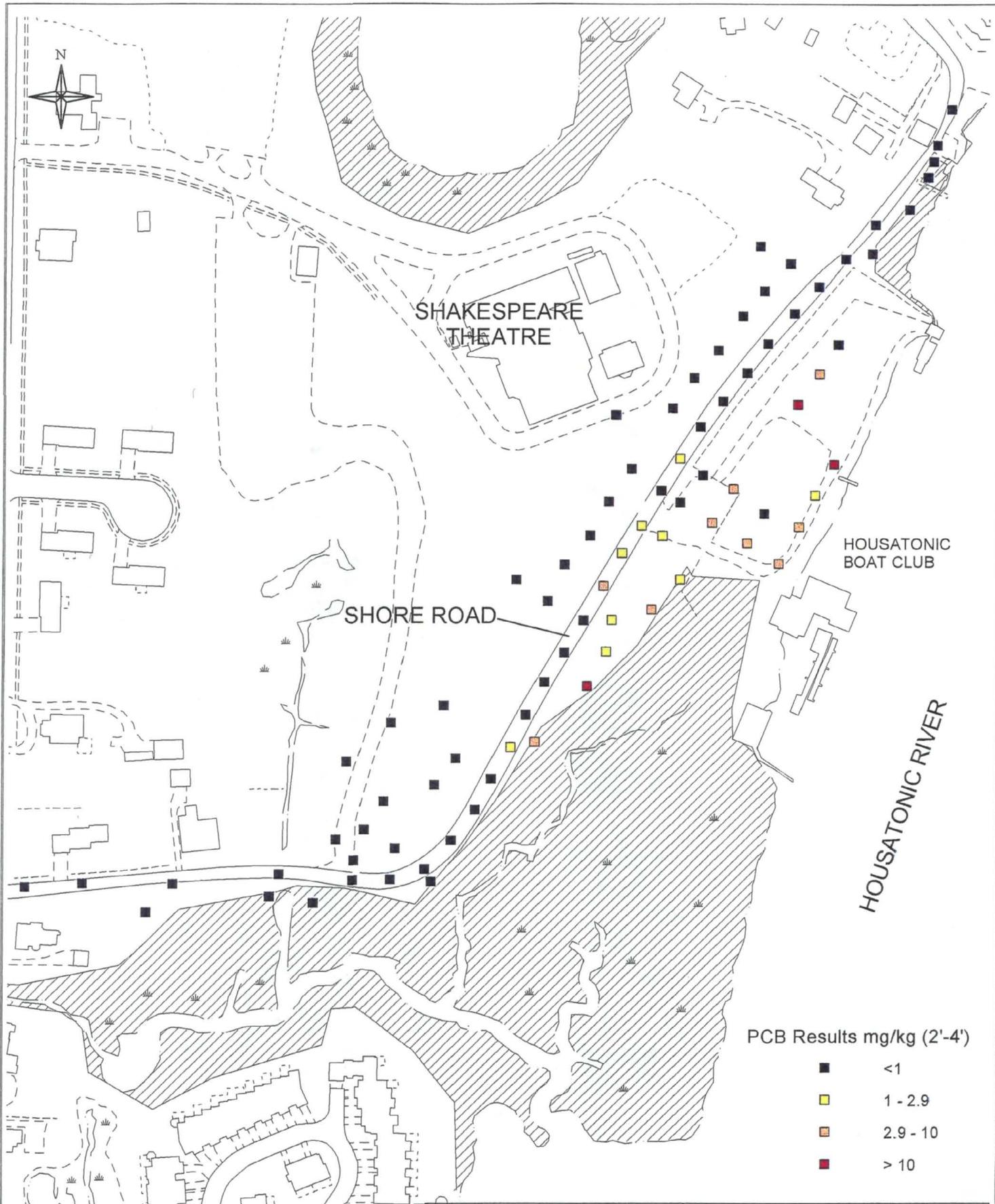
PCB Results mg/kg (0'-2')

- <1
- 1 - 2.9
- 2.9 - 10
- > 10

100 0 100 Feet

- NOTES:
- 1) PLAN NOT TO BE USED FOR DESIGN
 - 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 - 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED
 - 4) SAMPLES FROM 1.5'-2.5' ARE INCLUDED IN THE 0'-2' RANGE

PCB CONCENTRATIONS (0 ft - 2ft bgs)		FIGURE 1-5f	
RAYMARK - SHORE ROAD EE/CA		 TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



PCB Results mg/kg (2'-4')

- <1
- 1 - 2.9
- 2.9 - 10
- > 10

100 0 100 Feet

NOTES:
 1) PLAN NOT TO BE USED FOR DESIGN
 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED

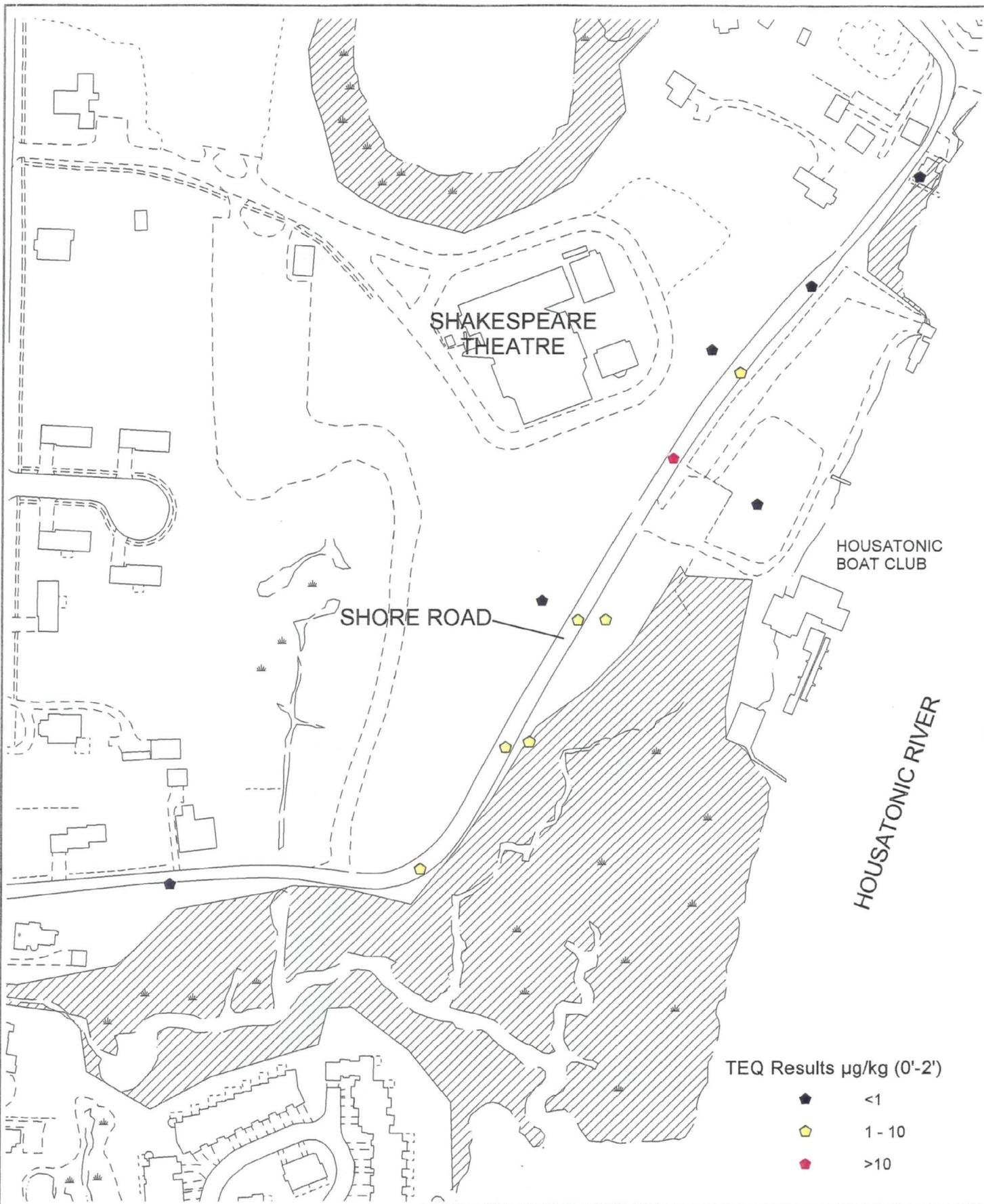
PCB CONCENTRATIONS (2 ft - 4ft bgs)	
RAYMARK - SHORE ROAD EE/CA	
STRATFORD, CONNECTICUT	
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR

FIGURE 1-5g



TETRA TECH NUS, INC.

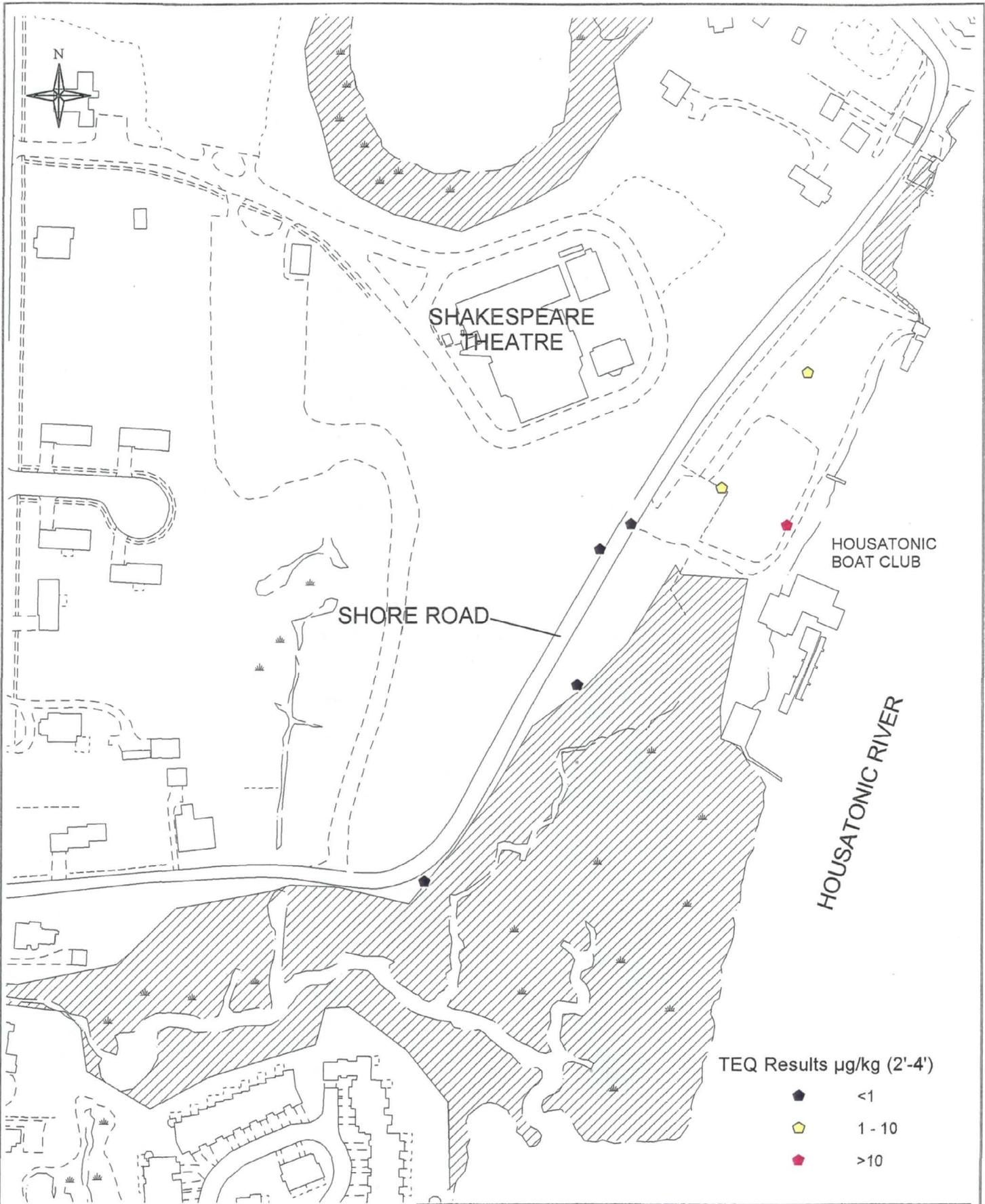
55 JONSPIN ROAD WILMINGTON, MA 01887
 (978)658-7899



100 0 100 Feet

- NOTES:
- 1) PLAN NOT TO BE USED FOR DESIGN
 - 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 - 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED
 - 4) RESULTS FROM 1.5 ft - 2.5 ft ARE EVALUATED IN THE 0 ft - 2ft RANGE

DIOXIN (TOXICITY EQUIVALENCY) CONCENTRATIONS (0 ft - 2ft bgs)		FIGURE 1-5h	
RAYMARK - SHORE ROAD EE/CA		 TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	



100 0 100 Feet

NOTES:
 1) PLAN NOT TO BE USED FOR DESIGN
 2) ALL LOCATIONS TO BE CONSIDERED APPROXIMATE
 3) IF MULTIPLE RESULTS EXIST FOR ONE BOREHOLE, THE MAXIMUM RESULT IS DISPLAYED

DIOXIN (TOXICITY EQUIVALENCY) CONCENTRATIONS (2 ft - 4ft bags)		FIGURE 1-5i	
RAYMARK - SHORE ROAD EE/CA		TETRA TECH NUS, INC.	
STRATFORD, CONNECTICUT			
DRAWN BY: D. A. CHISHOLM	DATE: JUNE 1, 1999	55 JONSPIN ROAD	WILMINGTON, MA 01887
SCALE: AS SHOWN	FILE: ...SHOREROAD.APR	(978)658-7899	

**Table #1 - RAYMARK
OPERABLE UNIT SUMMARY**

Operable Unit	Location w/Description
01	Facility - Location of former manufacturing facility - approx 33 acres in size. OU is complete with a cap over contaminated soils and an active DNAPL collection system. State have taken over O&M.
02	Groundwater (Site wide) - Contaminated GW is found in approx 506 acres; from the facility to a surface water body (Ferry Creek) to the Housatonic River. RA is likely to be hot spot remediation (VOCs are 50,000+ ppm in some areas) with natural attenuation as groundwater is not used in the area.
03	Ferry Creek (Area 1) - Area is approx 33 acres and includes a small surface water body starting from the facility and flowing through residential and commercial properties before flowing into the Housatonic River. Risks are being driven by contaminated sediments. RA could range from sediment removal and restoration to channeling Ferry Creek.
04	Raybestos Memorial Field - This is a large open area adjacent to the facility which was used as a waste disposal area for years. Upwards of 18 feet of contaminated fill is found on this 14 acre area. Likely RA will be capping with additional active controls for surface water runoff.
05	Shore Road - Four acre area adjacent to Housatonic River. Area was previously a wetland which was filled with contaminated material. Area has been determined to be an unacceptable risk and is being addressed by a NTCRA starting 99/4. RA will either be the excavation of contaminated soils or capping of the entire area. Either RA will include restoration to preconstruction conditions.
06	Commercial Properties - Approx 20 commercial properties located throughout the Raymark Site which were built on contaminated fill. Likely RA will be excavation and consolidation with restoration of each property to preconstruction conditions. Total area is approx 48 acres.
07	Ferry Creek (Area 2) - Area is approx 40 acres and includes wetlands and a small pond which all communicate with the Housatonic River. Risks will likely be predominately ecological, however, human health risks may be present from exposure to contaminated sediments. RA could range from limited sediment removal to extensive wetland restoration.
08	Ferry Creek (Area 3) - Area is approx 21 acres and includes wetlands which communicate with Housatonic River. Risks will likely be predominately ecological, however, human health risks may be present from exposure to contaminated sediments. RA could range from limited sediment removal to extensive wetland restoration.

Table #2

PRELIMINARY REMEDIATION GOALS (PRGs)

Constituent	PRG	Basis
Lead	400 ppm	OSWER Directive #9355.4-12 for residential exposure
Asbestos	< 1%	EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos 40 CFR § 61.151(a)(3)
PCBs	≤ 1 ppm	40 CFR §761.61 for high occupancy areas
Dioxins	1 ppb	Approaches for Addressing Dioxins in Soil at CERCLA and RCRA Sites, OSWER Directive 9200.4-26 (April 13, 1998)

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 2 - EE/CA Approval Memo

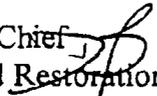
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I
JFK FEDERAL BUILDING, BOSTON, MA 02203

MEMORANDUM

DATE: January 19, 1999

SUBJ: Raymark Industries, Inc. Superfund Site
Approval Memorandum to Perform an Engineering Evaluation/Cost Analysis for a
Non-Time Critical Removal Action

FROM: Ron Jennings, RPMRS
Eve Vaudo, Enforcement Counsel 

THRU: Donald Berger, Chief 
Remediation and Restoration II Branch
Steven Novick, Acting Chief 
Emergency Planning and Response Branch

TO: Patricia L. Meaney, Director
Office of Site Remediation and Restoration

I. Subject

Investigations have determined that there has been a release of hazardous substances to the environment from the Raymark Industries, Inc. Superfund Site (the "Site") in Stratford, Connecticut. The Site consists of the Raymark facility and locations in the Town of Stratford where Raymark waste has come to be located. This memorandum documents the decision to proceed with an engineering evaluation/cost analysis ("EE/CA") for a non-time critical removal action ("NTCRA") at a portion of the Site. The EE/CA will be limited to evaluating alternatives for source control for the Shore Road and Housatonic Boat Club area which is a location that received manufacturing wastes as fill from the former Raymark Industries, Inc. Facility. The EE/CA will determine how EPA will provide a timely response to effectively minimize threats to public health or welfare or the environment which may result from the continuing release and threat of release of hazardous substances.

This memorandum is not a final Agency decision regarding the selection of a removal action for this Site.

II. Background

Site Description and History

The former Raymark Industries, Inc. Facility (the "Raymark Facility" or the "Facility") was located at 75 East Main Street in Stratford, Fairfield County, Connecticut (see Figure 1). From 1919 until September 1989, Raymark manufactured automotive and heavy brake friction components using asbestos, lead, copper, and a variety of adhesives and resins. As a result of manufacturing and waste disposal practices, soils at the Raymark Facility became contaminated with asbestos, lead, copper, polychlorinated biphenyls ("PCBs"), organic compounds, and other contaminants. Wastes produced as the result of manufacturing processes were routinely disposed of at the Facility and used to backfill low lying areas to create additional space for Facility expansion.

While the Raymark Facility was active, it was also common practice for the company to give away its excess manufacturing wastes for use as fill within the Town of Stratford. Although this practice was employed during most of the Facility's 70 years of operation, off site disposal of wastes increased as the low-lying areas within the Raymark Facility were filled. A RCRA §3013 Order was issued in 1987 which required Raymark to investigate the Facility to determine the extent of contamination. The facility closed manufacturing operations in 1989. In 1993, the Federal Agency for Toxic Substances and Disease Registry ("ATSDR") performed a health assessment. As a result of the assessment, ATSDR issued a Public Health Advisory for the Raymark Facility and locations around the Town of Stratford where Raymark waste had come to be located.

In response to ATSDR's Health Advisory, EPA and the Connecticut Department of Environmental Protection ("CTDEP") identified potential disposal locations, sampled numerous properties, and performed a series of removal actions from 1993 through 1996. These removal actions were performed at the former Facility and at residential, commercial, and municipal properties throughout the Town of Stratford where Raymark waste, with contaminants in excess of action levels, had come to be located. Removal actions were completed in 1996. EPA is currently continuing remedial activities on groundwater and other portions of the Site under an RI/FS.

The site was listed on the NPL on April 25, 1995.

Shore Road/Housatonic Boat Club

One of the locations where an interim removal action was conducted is an area south of the Raymark Facility, along Shore Road and the Housatonic Boat Club. (See Figure 2). In 1993, the CTDEP sampled soils in this area and found asbestos concentrations of up to 90%, as well as elevated levels of lead and PCBs. To address the risks posed by these contaminants, CTDEP

performed an interim removal action consisting of capping the area with a geotextile, then covering the geotextile with 6 inches of wood chips. This temporary capping, completed in 1994, was intended to be an interim measure. At that time, it was anticipated that a future permanent solution would be implemented as part of the Ferry Creek remedial action.

Currently, due to weather and use, the Shore Road and Housatonic Boat Club areas have been impacted and the temporary cap has been compromised. The 6 inch layer of wood chips is missing in some areas, exposing the geotextile which frequently shows some degree of damage. Of further concern is that the pavement of Shore Road, originally built on contaminated fill, is failing. The Town is reluctant to perform any repairs due to potential contaminant exposure. These potential contaminant exposures are of particular concern as the area receives considerable automotive and foot traffic. Shore Road continues to be used as a town road providing access to the Housatonic Boat Club, the Shakespeare Theater (located across Shore Road from the Boat Club), and several residences (see Figure 2). Outdoor events have been held along the grounds of the Shakespeare Theater which further attracts crowds that walk along Shore Road overlooking the Housatonic River.

III. Nature and Extent of Contamination

The areas of concern include the banks along the entire length of Shore Road, the Shakespeare Theater grounds, and the area surrounding the Housatonic Boat Club (the "Shore Road/Housatonic Boat Club area"). Results of surface soil sampling conducted in 1993, 1994, and 1997 are presented in Table 1 (see Figure 2 for sampling locations). Semi-volatile organic compounds (SVOCs), pesticides, PCBs, and elevated levels of some inorganics were found. Lead (38,700 ppm) and asbestos (90% of soil concentration) were two constituents found to present potential risks.

Ecological Assessment:

The environmental setting of the area was once a salt meadow marsh bordering the Housatonic River. A portion of the wetland has been completely filled displacing the channel of Ferry Creek to its present location. Portions of Shore Road are bordered by a salt water marsh. The Housatonic Boat Club, which has been built on fill, is bordered by the Housatonic River to the east.

An ecological risk assessment that is currently underway as part of the RI/FS process found sediments to be toxic to amphipods, oyster larvae, and clam larvae with the toxicity attributed to PCBs, dioxins, PAHs and a number of metals, including lead. Other risk assessment data found fiddler crab tissues with excess levels of PCBs, lead, copper and dioxin. There are numerous issues surrounding the long-term ecological impacts to nearby wetlands which are currently being addressed by various stakeholders. Because of these unresolved issues, the wetlands have not been included as a part of the proposed NCTRA.

IV. Preliminary Risk Screening

As part of the continuing RI/FS process, a draft baseline human health risk assessment has been completed for a large area bordering the Housatonic River which includes Shore Road and the Housatonic Boat Club. Because of concern of potential exposures to soils, and to evaluate the potential need of a NTCRA, EPA has conducted a separate risk screening for the Shore Road/Housatonic Boat Club area (see Attachment 1).

The risk screening was conducted for a current or future commercial worker. Other receptors evaluated included adult and older children using the area infrequently for recreation. The results of this screening found lead in the soils at concentrations that would result in a 94% probability that resulting blood lead levels would exceed acceptable levels. (EPA has determined that a probability greater than 5% is unacceptable). This screening also found asbestos at levels up to 90% in soil. (EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos requires that any asbestos containing material be covered according to 40 CFR § 61.151(a)(3)).

It is noted that the risks presented above may not be a true estimate of the actual risk. An updated risk screening for the area will be performed concurrently with the proposed EE/CA.

V. Threat to Public Health, Welfare, or the Environment

Section 300.415(b)(2) of the NCP lists a number of factors for EPA to consider in determining whether a removal action is appropriate, including:

- * (i) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- * (iv) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
- * (v) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released, and;
- * (vii) the availability of other appropriate federal or state response mechanisms to respond to the release.

An evaluation of the conditions at the Shore Road /Housatonic Boat Club area concluded that the above listed factors are applicable as described below.

(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants - There is both the current and future potential for direct human exposure to contaminants in soils along and beneath Shore Road as well as the area surrounding the Housatonic Boat Club. All of these areas are contaminated with VOCs, SVOCs, dioxin, pesticides and inorganics. While past measures were taken to prevent access to the soils, weather and use of the area has compromised the interim capping efforts.

There is, therefore, a current and future potential for human exposure through direct contact and inhalation of soil, as well as the potential for exposure to animals.

(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate - Table 1 presents the maximum concentrations of VOCs, SVOCs, dioxin, pesticides and inorganics found in surface soils. The preliminary risk screening was completed using surface soil data which found unacceptable levels of lead and asbestos. In areas where the interim cap has been compromised, this surface soil is subject to movement via surface water runoff and air transport. Because of this, there is currently a potential for pollutant migration.

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released - Shore Road and the area surrounding the Housatonic Boat Club building are within the 100 year flood zone. There have been numerous occurrences of flooding in both of these areas. Precipitation is also believed to have the ability to mobilize contaminants where releases could reach the Housatonic River during flooding and rainstorm events. A risk assessment currently underway found elevated levels of site related contamination in both river sediments and in crab tissue. The Housatonic River is utilized for fishing and recreational boating.

(vii) The availability of other appropriate federal or state response mechanisms to respond to the release - There are no other known federal or state funds or response mechanisms available to finance this action. The Town of Stratford requested that an action be taken in the Shore Road/Housatonic Boat Club area to address the potential of contaminant exposure for both current use as well as for future redevelopment and reuse plans. CTDEP concurs with the Town's request for an action.

EPA and the CTDEP have agreed to sign a Memorandum of Agreement (MOA) establishing responsibilities for both EPA and the CTDEP for the completion of the NTCRA at the Shore Road/Housatonic Boat Club area, the investigation and characterization of the area, and for implementation of a response action. CTDEP has agreed to commit \$1 million dollars toward the implementation of the ultimate response action.

Consequently, based upon the NCP factors listed and described above, a potential threat exists to public health or welfare or the environment at the Shore Road/Housatonic Boat Club area and, therefore, a removal action is appropriate to abate, prevent, minimize, stabilize, mitigate, or eliminate such threat(s). In particular, a removal action is necessary to control and contain the release of hazardous substances along Shore Road and the Housatonic Boat Club area through source control measures.

This removal action is designated as non-time critical because more than six months planning time is available before on-site activities must be initiated. As a result, EPA will require the

completion of an engineering evaluation/cost analysis (EE/CA) pursuant to 40 C.F.R. Section 300.415(b)(4)(i).

VI. Scope of the Proposed EE/CA

The purpose of the EE/CA is to evaluate alternatives for source control measures at a portion of the Site, including 1) the banks along and the area beneath Shore Road, 2) the Shakespeare Theater grounds, and 3) the area surrounding the Housatonic Boat Club.

The EE/CA will consider alternatives which meet the following removal action objectives:

- * prevent, to the extent practicable, the further release of contaminants into the groundwater, surface water, and sediments;
- * prevent, to the extent practicable, the discharge of any plume into the Housatonic River;
- * prevent, to the extent practicable, direct contact with, ingestion of, and inhalation of contaminated soils;
- * prevent, to the extent practicable, the release of contaminants from the area into the Housatonic River that occurs through flooding; and
- * prevent, to the extent practicable, continued ecological impacts from the release of contaminants from the area into the Housatonic River and nearby wetlands.

Pursuant to EPA guidance on performing EE/CA's, alternatives will be evaluated based upon relative effectiveness, implementability, cost, and compliance with ARARs to the extent practicable. Further, alternatives which exceed \$2 million dollars will be evaluated to determine their consistency with future remedial actions to be taken at the Site.

VII. Estimated Costs

The EE/CA for the proposed NTCRA at a portion of the Site will be developed by an EPA contractor under the Response Action Contracts (RACs) program. Either EPA, EPA's contractor, or a combination of both will be responsible for procurement and oversight of the response contractor.

Extramural costs associated with the preparation of an EE/CA for this portion of the Site are expected to be \$100,000. The costs associated with the response action are unknown but could approach \$10 million dollars. The costs will largely be dependent upon the completion of an updated risk screening which would be developed concurrently with the EE/CA.

VIII. Enforcement Strategy

In January 1997, the U.S. sued Raymark for past and future cleanup costs at the Site. The Raymark Facility was also named as a defendant to facilitate a judicial sale of the property. In August 1998, a Connecticut federal district court ordered that the property be sold and certain proceeds paid to the U.S. After the sale of the property, the U.S. intends to focus on pursuing Raymark's insurers.

EPA has also identified and sent information requests to numerous owners of small commercial properties along Ferry Creek. EPA has not yet confirmed the extent to which it will pursue these commercial property owners.

IX. Recommendation

In light of the facts discussed above, the case team recommends that you approve the initiation of an EE/CA for the Shore Road /Housatonic Boat Club area portion of the Site.

1-22-99
Date



Patricia L. Meaney
Director, Office of Site Remediation and Restoration
U.S. EPA - New England Region

TABLE 1

Surface Soil Maximum Concentrations

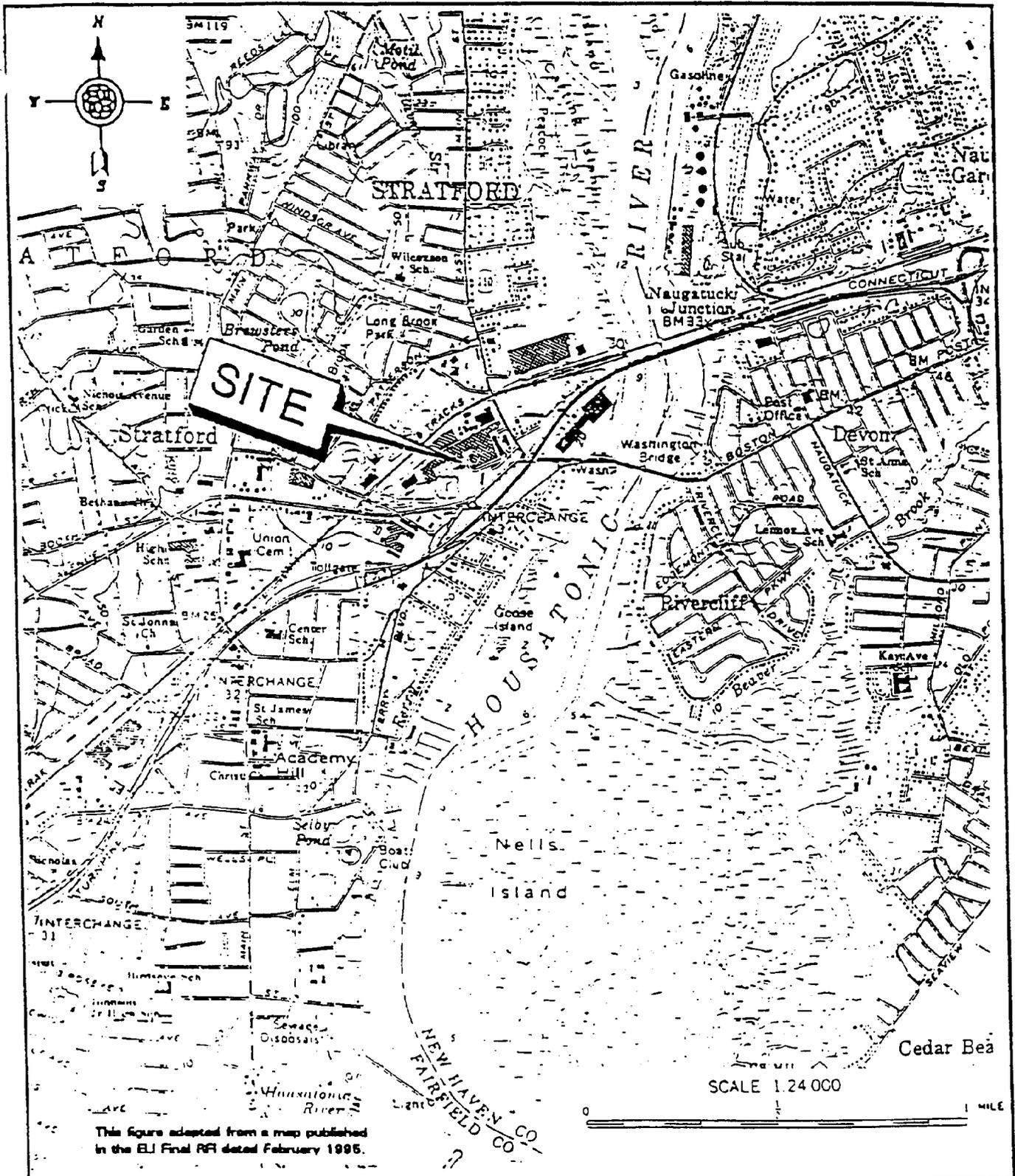
Constituent	Maximum Concentration
VOCs (ppb):	
2-butanone	31

SVOCs (ppb):	
2-methylphenol	89
4-methylphenol	2100
1,2,4-trichlorobenzene	38
naphthalene	65
acenaphthylene	260
acenaphthene	2000
dibenzofuran	930
fluorene	2000
phenanthrene	28000
anthracene	5400
carbazole	2700
di-n-butylphthalate	2700
fluoranthene	46000
pyrene	36000
butylbenzylphthalate	350
benzo(a)anthracene	18000
chrysene	19000
bis(2-ethylhexyl)phthalate	6800
benzo(b)fluoranthene	17000
benzo(k)fluoranthene	15000
benzo(a)pyrene	15000
indeno(1,2,3-cd)pyrene	10000
dibenz(a,h)anthracene	270
benzo(g,h,i)perylene	1900

asbestos (%)	90
dioxin (ppb) - tox equiv.	9.012

Constituent	Maximum Concentration
Inorganics (ppm):	
aluminum	14100
arsenic	16.8
barium	16800
beryllium	0.56
cadmium	2
calcium	58200
chromium	199
cobalt	29.9
copper	49300
iron	39400
lead	25300
magnesium	54700
manganese	462
mercury	1
nickel	364
potassium	10600
selenium	2.6
silver	1.5
sodium	21100
thallium	0.31
vanadium	59.6
zinc	10700

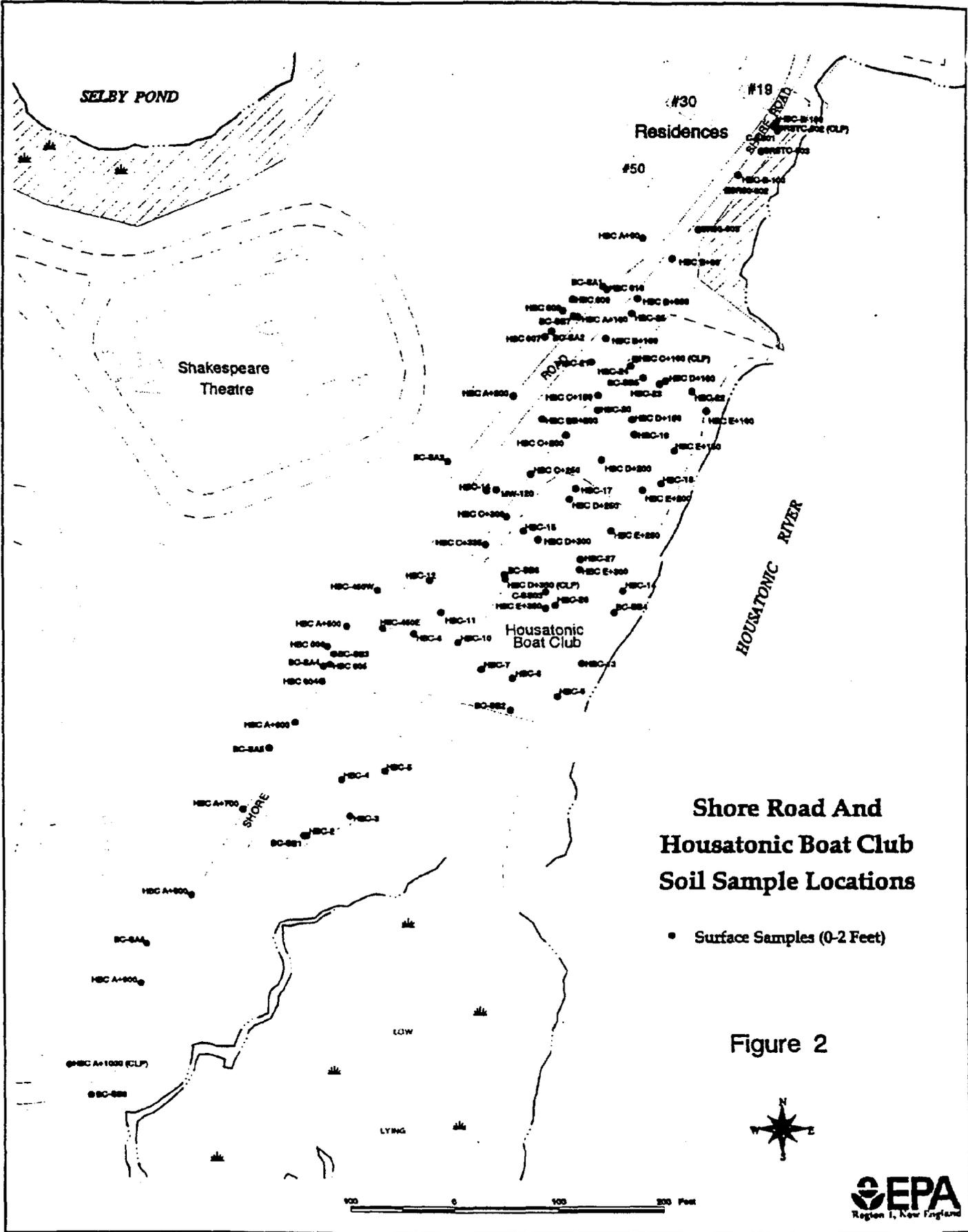
Pesticides/PCBs (ppb):	
delta-BHC	2.9
aldrin	0.49
endosulfan I	4.9
dieldrin	6.9
4,4'-DDE	130
endrin	0.69
endosulfan II	2.1
4,4'-DDD	14
4,4'-DDT	200
methoxychlor	50
endrin ketone	2.6
endrin aldehyde	82
alpha-chlordane	4.7
gamma-chlordane	35
aroclor 1260	26000
aroclor 1262	38000
aroclor 1268	119000



**FACILITY LOCATION MAP
 RAYMARK INDUSTRIES, INC.
 REMEDIAL INVESTIGATION
 STRATFORD, CONNECTICUT**



FIGURE 1



**Shore Road And
Housatonic Boat Club
Soil Sample Locations**

• Surface Samples (0-2 Feet)

Figure 2



Memo

To: Ron Jennings, RPM
From: Margaret McDonough
Date: December 21, 1998
Subject: Human Health Risks at Ferry Creek OU, Area C (Housatonic Boat Club)

The highest potential risks via contact with contaminants in the surface soils at the Housatonic Boat Club were estimated for a current or future commercial worker. Other receptors evaluated include adult and older children using the area infrequently for recreation. A summary of potential risks is presented below.

Lead

The draft baseline risk assessment prepared for the Ferry Creek OU3 shows that lead concentrations are within the range of acceptable lead-in-soil concentrations, if exposure is assumed to occur randomly across the entire 15 acre area.

I have taken a closer look at the risk assessment for Area C, the Housatonic Boat Club for the purpose of assessing whether "hotspots" exist within this part of the Ferry Creek OU. Data from across 15 acres was averaged together in the risk assessment; thus, the high concentrations have been "averaged out." If the assumed worker exposure (250 days/year over 25 years) could potentially occur over a smaller area, then the potential risk from lead has been significantly underestimated for two "subareas" of the Housatonic Boat Club as shown in the attached figure (Figure 1).

I have recalculated the predicted risks from exposure to lead-in-soil for the two lead "hotspots" shown in Figure 1. The probability that blood lead levels, applicable to women of child bearing age and protective of a fetus, would be unacceptable in the areas bordering the wetlands ("Lead Hotspot #1) is greater than 94% (Table 1). The predicted probability in the smaller area shown along Shore Rd. (Lead Hotspot #2) is greater than 84% (Table 2). EPA has determined that a probability greater than 5% is unacceptable. Again, these risks are based on the assumption that chronic exposure may occur in each of these subareas rather than, on average, across the entire site.

Asbestos

Asbestos occurs in approximately 40 % of the samples in Area C. Asbestos concentrations are

expressed as percent by volume; the maximum concentration is 90%. The detection limit is 1%. Asbestos contamination also appears to occur in smaller areas of the Boat Club. There are two "subareas" in addition to the areas with high lead described above, in which asbestos greater than 1% occurs. (See Figure 1.)

Asbestos exposure via inhalation has been shown to cause lung cancer and pleural mesothelioma in humans and animals. By the ingestion route, adverse health effects are less certain. However, no health based criteria exist for exposure to asbestos in soil. A significant threat to human health may occur when friable asbestos fibers become airborne and exposure then occurs via inhalation. EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos (Section 112 of the Clean Air Act) defines asbestos containing material as any material containing 1% or greater asbestos as measured by polarized light microscopy. This standard requires that any asbestos containing material be covered according to Section 61.151(a)(3).

Carcinogenic Risk

Total carcinogenic risk is approximately 1×10^{-5} . The risk is attributable to PAHs and PCBs. The higher levels of PCBs are co-located with the larger lead hotspot. The risks from PCBs in this subarea alone are approximately 1×10^{-5} .

Noncarcinogenic Risk

Noncarcinogenic risks are below Hazard Index of one.

Attachments

FIGURE 1

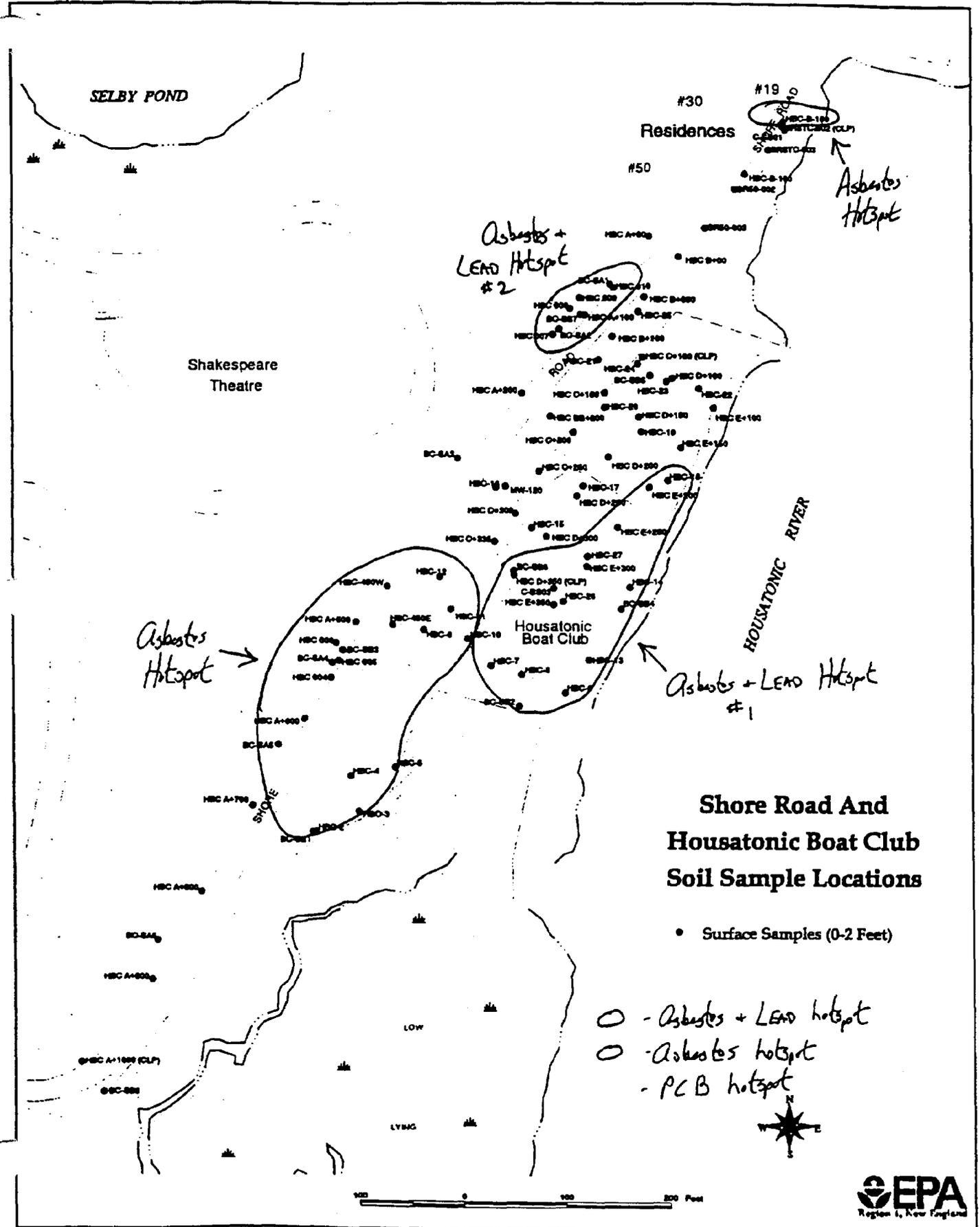


TABLE I

Calculations of 95th Percentile Fetal Blood Lead Concentrations for Adult Exposure to Soil

SITE NAME: AREA C: HOUSATONIC BOAT CLUB

LOCATION: FERRY CREEK, STRATFORD, CONNECTICUT, "HOTSPOT #1"

RECEPTOR: FUTURE COMMERCIAL WORKER - REASONABLE MAXIMUM/CENTRAL TENDENCY EXPOSURES ; SURFACE SOIL

DATE: JUNE 3, 1998 December 21, 1998 MYM

OBJECTIVE: Adult exposure to lead in soil is addressed by an evaluation of the relationship between the site soil lead concentration and the blood lead concentration in the developing fetuses of adult women. This spreadsheet calculates a range of 95th percentile fetal blood lead concentrations from central estimates of blood lead concentrations in pregnant adult women using the exposure parameters identified below (U.S. EPA, Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil, December 1996).

RELEVANT EQUATIONS: $PbB_{adult, central} = PbB_{adult, 0} + (PbS \times BKSf \times IR_s \times AF_s \times EF_s) / AT$
 and
 $PbB_{fetal, 0.95} = PbB_{adult, central} \times GSD_{i, adult}^{1.645} \times R_{fetal/maternal}$

Exposure Parameter	Description (units)	GSD _i = 1.8 - 2.1; PbB _{adult, 0} = 1.7 - 2.2			
		Adult 1	Adult 2	Adult 3	Adult 4
PbB _{adult, 0}	Typical blood lead concentration in adult women of child-bearing age in absence of site exposures (ug/dL)	1.7	1.7	2.2	2.2
PbS	Site-specific soil lead concentration (mg/kg)	9534	9534	9534	9534
BKSf	Biokinetic slope factor (ug/dL per ug/day)	1380	1380	1380	1380
IR _s	Intake rate of soil, includes outdoor soil and indoor soil-derived dust (g/day)	0.4	0.4	0.4	0.4
AF _s	Absolute gastrointestinal absorption fraction (unitless)	0.050	0.050	0.050	0.050
EF _s	Absolute gastrointestinal absorption fraction (unitless)	0.12	0.12	0.12	0.12
AT	Averaging time (days/year)	250	250	250	250
GSD _{i, adult}	Estimate of individual geometric standard deviation among adults (unitless)	365	365	365	365
R _{fetal/maternal}	Constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration (unitless)	1.8	2.1	1.8	2.1
PbB _{adult, central}	Calculated central estimate of blood lead concentrations in adult women of child-bearing age from site exposures (ug/dL)	0.9	0.9	0.9	0.9
PbB _{fetal, 0.95}	Calculated 95th percentile blood lead concentrations among fetuses born to women having site exposures (ug/dL)	3.97	3.97	4.47	4.47
		17.4	17.4	17.9	17.9
		9.39	12.10	10.58	13.63
		41	53	42	55

Note: According to the cited guidance document, this adult exposure model is not applicable for infrequent site exposures, where the EF_s is less than 1 day/week.

PROBABILITY OF EXCEEDING ACCEPTABLE LEVEL: 97% 97% 94% 97%

00021

TABLE 2

Calculations of 95th Percentile Fetal Blood Lead Concentrations for Adult Exposure to Soil

SITE NAME: AREA C: HOUSATONIC BOAT CLUB ; HOTSPOT # 2
 LOCATION: FERRY CREEK, STRATFORD, CONNECTICUT
 RECEPTOR: FUTURE COMMERCIAL WORKER - REASONABLE MAXIMUM/CENTRAL TENDENCY EXPOSURES ; SURFACE SOIL
 DATE: JUNE 3, 1998 December 21, 1998 MJA

OBJECTIVE: Adult exposure to lead in soil is addressed by an evaluation of the relationship between the site soil lead concentration and the blood lead concentration in the developing fetuses of adult women. This spreadsheet calculates a range of 95th percentile fetal blood lead concentrations from central estimates of blood lead concentrations in pregnant adult women using the exposure parameters identified below (U.S. EPA, Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil, December 1996).

RELEVANT EQUATIONS: $PbB_{adult, central} = PbB_{adult, 0} + (PbS \times BKSF \times IR_s \times AF_s \times EF_s) / AT$
 and
 $PbB_{fetal, 0.95} = PbB_{adult, central} \times GSD_{i, adult}^{1.845} \times R_{fetal/maternal}$

Exposure Parameter	Description (units)	GSD _i = 1.8 - 2.1; PbB _{adult, 0} = 1.7 - 2.2			
		Adult 1	Adult 2	Adult 3	Adult 4
PbB _{adult, 0}	Typical blood lead concentration in adult women of child-bearing age in absence of site exposures (ug/dL)	1.7	1.7	2.2	2.2
		5200	5200	5200	5200
PbS	Site-specific soil lead concentration (mg/kg)	1380	1380	1380	1380
BKSF	Biokinetic slope factor (ug/dL per ug/day)	0.4	0.4	0.4	0.4
IR _s	Intake rate of soil, includes outdoor soil and indoor soil-derived dust (g/day)	0.050	0.050	0.050	0.050
AF _s	Absolute gastrointestinal absorption fraction (unitless)	0.12	0.12	0.12	0.12
EF _s	Exposure frequency (days/year)	250	250	250	250
AT	Averaging time (days/year)	365	365	365	365
GSD _{i, adult}	Estimate of individual geometric standard deviation among adults (unitless)	1.8	2.1	1.8	2.1
R _{fetal/maternal}	Constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration (unitless)	0.9	0.9	0.9	0.9
PbB _{adult, central}	Calculated central estimate of blood lead concentrations in adult women of child-bearing age from site exposures (ug/dL)	2.07 10.24	3.97 10.24	7.37 10.74	1.17 10.74
PbB _{fetal, 0.95}	Calculated 95th percentile blood lead concentrations among fetuses born to women having site exposures (ug/dL)	9.39 15.66	12.10 20.27	10.58 16.4	13.63 21.26

PROBABILITY OF EXCEEDING ACCEPTABLE LEVEL 85% 86% 87% 87%

Note: According to the cited guidance document, this adult exposure model is not applicable for infrequent site exposures, where the EF_s is less than 1 day/week.

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 3 - ATSDR Public Health Advisory

AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

**PUBLIC HEALTH ADVISORY
FOR
RAYMARK INDUSTRIES/STRATFORD ASBESTOS SITES
STRATFORD, FAIRFIELD COUNTY, CONNECTICUT**

May 26, 1993

INTRODUCTION

This Public Health Advisory is to advise the U.S. Environmental Protection Agency (EPA), the State of Connecticut, the town of Stratford, and the public of an imminent public health hazard. This hazard is associated with past, present, and potential future exposures to waste from past operations and disposal practices of the Raymark Industries facility (Raymark facility) located in Stratford, Connecticut. The known contaminants of health concern are asbestos, lead, and polychlorinated biphenyls (PCBs). This Public Health Advisory is issued as a result of actions taken by the Agency for Toxic Substances and Disease Registry (ATSDR) in response to an EPA Region I request for a health consultation, as well as a petition request for a Public Health Assessment from the town of Stratford. ATSDR has concluded that former operations at the Raymark facility and the waste disposal practices at the facility and throughout the town of Stratford warrant the issuance of a Public Health Advisory.

The areas included in this Advisory are the Raymark facility; the 15 known locations in the town of Stratford where facility waste was used as fill material; any additional locations (yet to be identified) where the waste was used as fill material and where there is a potential for human exposure; and any locations where Raymark waste may have contaminated other areas (e.g., surface water runoff, air). Of urgent concern are the following eight known locations where waste is present on or near the ground surface (not in order of health risk): (1) Wooster Junior High School playing field; (2) Short Beach Park recreational area; (3) 4th and 5th Avenue; (4) Spada property; (5) Morgan/Francis property; (6) Lot K/Elm Street property; (7) Housatonic Boat Club; and (8) one identified residence bordering the Raybestos Memorial Field. Based on EPA Region I, Connecticut Department of Environmental Protection (CTDEP), and Connecticut Department of Health Services (CTDOH) surface soil screening analysis of the above-mentioned locations (April and May 1993) for asbestos, lead, and PCBs, ATSDR has determined that there is an urgent health hazard to the public associated with these locations.

Feasible routes of human exposure to site-related contaminants include inhalation, direct dermal contact, ingestion of waste present in the soil, and consumption of potentially contaminated area seafood. For these reasons, ATSDR recommends that actions be taken to:

1. Dissociate the public from areas where exposure to Raymark waste at levels of health concern can occur.
2. Continue surface soil (0-3 inches) sampling/screening efforts for asbestos, lead, and PCBs in residential yards adjacent to areas where waste has been identified on or near the ground surface. If contaminants are found at levels of health concern, implement measures to cease exposure.
3. Continue efforts to identify other locations where Raymark waste was used as fill material and conduct appropriate sampling and mitigation if necessary.
4. Sample interiors of homes adjacent to areas of exposed waste and/or where yard soil screening results indicate contaminants at levels of health concern for free asbestos fibers, lead, and PCBs. If contaminants are found at levels of health concern, implement measures to cease exposure.
5. Conduct sediment sampling of Ferry Creek and its junction with the Housatonic River and seafood sampling to determine if site-related contaminants are present at levels of health concern. The sampling plan should be a cooperative effort among all agencies involved to ensure that the results can be used for public health and regulatory/enforcement purposes.
6. Conduct an area well survey to ensure that groundwater is not in use for potable purposes. If private wells are found, ensure that well users are not exposed to site-related contaminants at levels of health concern.
7. Establish controls to require soil sampling and analyses in areas of Stratford where Raymark waste material may have been placed prior to conducting any invasive activities (e.g., water line installation, sewage line installation, maintenance of buried line, construction, grading) to avoid health hazards to workers or others by bringing buried waste material to the ground surface. If waste material is found and invasive activities are necessary, all regulations for worker protection and hazardous material handling and disposal should be followed.

8. Consider the Raymark facility property and other locations where Raymark waste is present at levels of health concern for inclusion on the EPA National Priorities List, and/or use other statutory or regulatory authorities as appropriate to characterize the areas of concern and take necessary action.

BACKGROUND

The town of Stratford is located on Long Island Sound between Bridgeport, Connecticut, and the Housatonic River. The 1990 census data indicated a population of approximately 50,000. In 1990, 14 percent of the population was comprised of children between 5 and 7 years of age. The community has been characterized as working class, with principal industries including manufacturing of aircraft, air conditioning, brake linings, cheese, chemicals, plastic, paper, rubber goods, electrical and machine parts, and toys. In Stratford there are two senior high schools, three middle schools, numerous grammar schools, five recreational parks, and two municipal beaches. The source of potable water for Stratford is the Trapp Falls reservoir located in Trumbull (north of Stratford). It is unlikely that area groundwater is currently used for potable purposes. However, no well survey has been conducted to confirm that there are no potable water supply wells currently in use.

Raymark Industries, Inc., owns and operated a facility on 75 East Main Street in Stratford, Connecticut, from 1919 until September 1989 when operations ceased. The facility is 33.4 acres in size and produced brakes, clutch parts, and other friction based products. During the manufacturing process, wastes generated included ignitable and corrosive wastes, solvents, liquid adhesives, phenolic resins, alcohol, caustic, phenolic mixtures, lead, asbestos, PCBs, and dioxins/furans [1]. On-site groundwater is known to be contaminated with solvents, mainly toluene [1].

Raymark routinely disposed of its waste on the facility property and at other locations in Stratford. From 1919 to July 1984, Raymark used a system of lagoons to attempt to capture the waste lead and asbestos. Over this 65 year period, these lagoon systems were located at numerous locations on the western and central portions of the facility. As the lagoons filled up with sludge, they were often dredged and the material was used as fill in locations around Stratford. Currently, a series of four lagoons remain on the site. Three of these four lagoons have been temporarily capped. These lagoons stopped receiving waste in 1984. Lagoon #4 remains uncapped and continues to serve as a collection basin and final discharge point for the facility's storm water runoff system. This lagoon drains into Ferry Creek, which flows south and east 0.5 miles to the Housatonic River.

EPA Region I has been involved with the Raymark facility since 1984. In the fall of 1992, Raymark was ordered by EPA Region I to stabilize its facility and the property; to limit the potential for human contact to on-site contamination; and to limit the potential for release of hazardous substances and contaminants from the site. Since that time, public access to the property has been restricted as long as the entrance gate remains secured; tanks have been identified, characterized and assessed; approximately 80 percent of hazardous materials have been removed from the tanks; and a study has begun to assess the potential off-site migration of contaminants via surface water runoff [1]. In 1989 and 1992, ATSDR provided EPA Region I with health consultations for the Raymark facility property, and for 12 areas of known asbestos waste disposal [2, 3].

In February 1993, EPA Region I requested ATSDR to evaluate dioxin analyses from soil samples collected on the Raymark facility property and to assess the potential health hazard. The samples were composites of deep core samples. The highest level of 2,3,7,8-tetrachloro dibenzo-p-dioxin toxicity equivalents was approximately 7 parts per billion (ppb) in a 0- to 10-foot composite sample [4]. ATSDR determined that because access to the property was restricted and the waste was covered with pavement or a gravel cap, that no health hazard is currently posed by the presence of dioxins on the Raymark facility [5]. However, since that time, more recent EPA Region I sampling and screening analyses from potholes on the facility property has revealed chrysotile asbestos up to 85 percent, lead up to 16,000 parts per million (ppm), and PCBs up to 240 ppm [6]. EPA Region I has since directed Raymark to cover these exposed areas [6]. According to EPA Region I, Raymark has complied with this request.

In May of 1993, EPA Region I will have completed a Removal Action at the Raybestos Memorial Field. The effort includes covering the waste material with a temporary soil cap, posting warning signs, and fencing and vegetating the field. ATSDR has provided EPA Region I with two health consultations during this Removal Action [7, 8]. EPA Region I is in the process of determining if the Raybestos Memorial Field along with the Raymark facility property should be placed on their National Priorities List (NPL).

For the NPL ranking process, EPA Region I has collected sediment and soil samples outside the perimeter of Raymark facility and Raybestos Memorial Field, including the Housatonic River and Ferry Creek [9]. Sampling results outside the perimeter of the Raybestos Memorial field have revealed lead contamination up to 150,000 ppm at a 12-inch depth in a residential yard. More recent surface soil screening analyses for lead and asbestos conducted by EPA Region I have detected lead up to 7,765 ppm and

PCBs up to 96 ppm. Analysis for asbestos has not yet been performed for these samples.

Results of sediment sampling have revealed lead up to 14,000 ppm, and PCBs up to approximately 150 ppm at a sample collected at the lagoon #4 culvert inlet into Ferry Creek. In a sediment sample collected in the Housatonic River at the mouth of Ferry Creek, lead was detected at approximately 718 ppm, and PCBs at approximately 4.6 ppm. An upstream Housatonic River sediment sample contained lead at approximately 10 ppm and PCBs below the analytical method detection limit (detection limit ranged from 42 ppb to 1.6 ppm) [9].

The Housatonic River discharges into Long Island Sound, which is utilized by the commercial seafood industry. The area of the Long Island Sound potentially impacted by site runoff is used to cultivate seed oysters. After reaching a certain size/age the oysters are moved to another location for maturation and harvesting. Although non-commercial harvesting of shellfish is prohibited, anecdotal information indicates that individuals may fish and harvest crabs and clams in the potentially affected areas. Anecdotal information also indicates that members of an Asian community residing north of Stratford harvest a bottom dwelling clam from the area of potential health concern and that these clams are a routine component of their diet. Because PCBs have been found in Ferry Creek, and dioxins and PCBs have been found on the Raymark facility property, a potential health hazard may exist from bioaccumulation of PCBs and dioxin in seafood. Lead and other site-related contaminants may also be present at levels of health concern.

Since April 1993, EPA Region I, CTDEP, and CTDOH have conducted surface soil sampling and screening analyses (asbestos, lead, and PCBs) at 8 of the 15 known locations around the town with high public access and where waste material is present on the ground surface (not including screening conducted on the Raymark facility). ATSDR, EPA Region I, CTDEP, CTDOH, and the Stratford Health Director agreed that these 8 locations are of highest priority because of the likelihood of public access and proximity to residential/recreational areas. EPA Region I is currently conducting laboratory analyses of surface soil samples from these locations for metals, PCBs/pesticides, dioxins/furans, and base neutral/acid extractable compounds. These results are anticipated to be available by August 1993, and will be evaluated by the health agencies to determine if additional public health hazards are present. Results of soil screening data along with a description of the locations are as follows (not necessarily in order of health risk) [9, 10]:

1. Wooster Junior High School Playing Fields: The north playing field consists of three baseball fields and a soccer field. The south playing field consists of two

baseball fields. Contaminants were not found at levels of health concern in samples collected in the south field. Chrysotile asbestos up to 30 percent, lead up to 1,797 ppm, and PCBs up to 44 ppm were found on the north playing field.

2. Short Beach Park Recreational Area: The recreational area consists of two softball fields, a little league field, a soccer field, and a golf range. Chrysotile asbestos up to 15 percent, lead up to 860 ppm, and PCBs up to 5 ppm were found on this area.
3. 4th/5th Avenue: This area is a vacant land parcel surrounded by residences. Chrysotile asbestos up to 80 percent, lead up to 8,409 ppm, and PCBs up to 15 ppm were found in this area.
4. Spada Property: This area is bisected by Ferry Creek. Commercial properties are located along the northwest side of the creek, residential areas are located on the opposite side. Chrysotile asbestos up to 90 percent, lead greater than 10,000 ppm (above detection limit of screening instrument), and PCBs up to 27 ppm were found on the commercial portion of the location.
5. Morgan/Francis: This location is bordered by Ferry Boulevard and East Broadway to the east, Ferry Creek to the northeast, and a residential area to the northwest. A commercial business is located on the property. Chrysotile asbestos up to 80 percent, lead up to 6,000 ppm, and PCBs up to 4 ppm were found in an area adjacent to the residences.
6. Lot K/Elm Street: This location is an occupied private residence. Chrysotile asbestos up to 90 percent, lead above 10,000 ppm, and PCBs up to 55 ppm were found in the yard.
7. Housatonic Boat Club: This boat club/marina is located between Shore Road and the Housatonic River. Raymark waste was used as a base for Shore Road. The waste also underlies a portion of the boat club property. Chrysotile asbestos up to 90 percent, lead above 10,000 ppm, and PCBs up to 108 ppm were found on the boat club property.
8. Raybestos Memorial Field: Surface soil samples were collected from one occupied residential property adjacent to the Raybestos Memorial Field and screened for lead and PCBs. Lead up to 7,765, and PCBs up to 96 ppm were found. Asbestos analysis has not yet occurred.

The town of Stratford submitted a petition for a Public Health

Assessment to ATSDR in February 1993 [11]. ATSDR has determined that a public health assessment and a health consultation will be conducted in response to this petition.

A site visit was conducted by ATSDR on April 6 and 7, 1993, with representatives of EPA Region I, U.S. Coast Guard, CTDOH, the Stratford Health Director, and the Stratford Department of Public Works [12]. At the request of EPA Region I and CTDEP, ATSDR and CTDOH have jointly reviewed all soil screening and analytical data for the eight high priority locations. These evaluations have been verbally provided to EPA Region I, the State of Connecticut, and the Stratford Health Director [13]. Based on these evaluations, the town of Stratford has attempted to restrict access to the Wooster Junior High School northern playing field, the Short Beach Park recreational area, and the Housatonic Boat Club. The CTDEP is currently in the process of designing and installation of interim covers/caps as a temporary measure to cease human exposure to contaminants at these 8 areas.

CTDOH and the Stratford Health Director have initiated health education efforts for both area health professionals and the public. CTDOH and ATSDR are initiating a review of available health data to evaluate the occurrence of adverse health outcomes in the community that may be plausible from exposure to asbestos, PCBs, lead, and other contaminants that may be present from Raymark waste.

BASIS FOR THE ADVISORY

This Public Health Advisory is being issued based on the following:

1. An imminent public health hazard is posed from past, current, and potential future exposures via inhalation, ingestion, and direct dermal contact with Raymark waste containing asbestos, lead, and PCBs.
2. The potential for asbestos, lead, PCBs, and other possible contaminants found in Raymark waste to be carried into homes on shoes, in clothing, and from pets may pose a health hazard via ingestion and inhalation.
3. A potential public health concern is posed by consumption of seafood caught in or near Ferry Creek that may contain Raymark waste contaminants at levels of health concern.

The contaminants found to date above levels of health concern are asbestos, lead, and PCBs. The most significant human exposure routes of health importance for these contaminants when they are

found on the ground surface are as follows: inhalation (asbestos and lead); ingestion (lead and PCBs); and dermal absorption (PCBs).

Asbestos is a group of six naturally occurring fibrous minerals. Chrysotile is the fibrous form of serpentine and is the most abundant form of asbestos produced for commercial usage. Through the inhalation route of exposure, asbestos is a known human carcinogen and is one of the primary causes of mesothelioma. Mesotheliomas are tumors arising from the thin membrane surrounding internal organs. Inhalation of asbestos fibers may lead to fibrotic lung disease (asbestosis), cancer of the lung, the pleura, and the peritoneum. There is some evidence that inhalation and ingestion of asbestos fibers may lead to an increased risk of gastrointestinal cancer [14].

Typically, a latency period of between 10 and 30 years exists between exposure to asbestos and the occurrence of apparent health effects. In order for exposure to occur (via inhalation), the asbestos must exist as free fibers capable of becoming airborne. The length and diameter of the asbestos fiber is a factor in determination of the adverse health outcomes of exposure. Fibers less than 0.5 microns in diameter appear to be most active in producing tumors, purportedly because they can readily penetrate into alveolar regions of the lung. Fibers longer than 5 to 10 microns appear to be most active in inducing increased risks of pulmonary fibrosis and lung cancer. However, based on human epidemiological and animal studies, evidence indicates that all types of asbestos, including chrysotile, can cause cancer [14, 15].

Human inhalation studies using several concentrations of airborne asbestos fibers have shown an excess cancer risk [15]. A marked enhancement of the risk of lung carcinoma in exposed workers or populations who also smoke cigarettes has been noted in human epidemiology studies. This increase in risk may be as high as ten times or more than that of a non-smoker [14].

Exposure to lead on or near the ground surface can occur via ingestion and, if the lead becomes airborne, via inhalation. The most sensitive sub population for adverse health effects resulting from lead exposure are fetuses, infants, and young children. Factors accounting for this susceptibility include: (1) the immaturity of the blood brain barrier which allows entry of lead into the immature nervous system; (2) hand-to-mouth behavior and pica behavior (extreme hand-to-mouth activity) which leads to the consumption of lead from contaminated media; (3) enhanced gastrointestinal absorption of lead (affected by the nutritional status of the child); (4) low body weight; and (5) the ready transfer of lead across the placenta to the developing fetus [16]. These factors put children exposed to lead at a much higher risk of developing adverse health effects.

Since lead readily crosses the placental barrier, exposure of women to lead during pregnancy results in uptake by the fetus. Prenatal exposure to lead (4-8 micrograms per deciliter (ug/dl) maternal cord blood lead level) is associated with premature delivery, decreased birth weight, impaired postnatal neuro-behavioral development, and decreased postnatal growth rate [16]. Information from the Centers for Disease Control and Prevention (CDC) indicates that some adverse health effects (possible subtle neuro-behavioral deficiencies) could occur in children with blood lead levels as low as 10 ug/dl [17].

Blood lead levels are raised above background, on average, about 5 ug/dl for every 1,000 ppm of lead in soil or dust, and may increase 3 to 5 times higher depending on play habits and mouthing behavior [17]. Even lower soil levels of lead have been suggested as contributing to excessive blood lead levels in some children [18].

PCBs are environmentally persistent and concentrate upward in the food chain. The chemical stability and resistance to biodegradation of PCBs accounts for their persistence in the environment [19]. Exposure to PCBs can occur from ingestion of contaminated soil and food, inhalation of contaminated dusts, and dermal absorption. Excretion of PCBs is slow, causing bioaccumulation of the contaminant in humans even at low exposure levels. PCBs are stored in the fat of the body [19].

Fetuses and neonates are potentially more sensitive to PCBs than adults because of the contaminant distribution across the placenta and because fetuses and neonates lack enzymes which are normally found in the liver that make the breakdown and excretion of PCBs easier. In addition, PCBs accumulate in breast milk.

Exposure to PCBs has been shown to cause the following: elevations in blood fats (i.e., triglycerides, cholesterol); increases in certain liver and kidney enzymes; chloracne in humans; and may have reproductive effects. Animal studies indicate that ingestion of PCBs can lead to adverse immunological effects, including a decrease in antibody levels. The Department of Health and Human Services has determined that PCBs may reasonably be anticipated to be carcinogens [19].

Food can be a major source of PCB exposure, usually from fish and animal fat. PCBs preferentially separate from water and adsorb to sediment. PCBs bioconcentrate upward in the food chain. The Food and Drug Administration (FDA) mandates tolerances of 0.2 to 3 ppm PCBs for all foods, with a tolerance level in fish of 2 ppm. This tolerance level is intended to be used as a guideline. Lower levels of PCBs in fish are necessary for subsistence fishing populations and sensitive populations [19].

CONCLUSIONS

The ATSDR has determined that:

1. There is an imminent public health hazard from past, current, and potential future exposures to Raymark waste containing asbestos, lead, PCBs, and other possible contaminants.
2. A potential public health hazard is posed by indoor exposure to asbestos, lead, PCBs, and other possible Raymark waste contaminants that may have been tracked inside residences via clothing, shoes, and pets.
3. A potential public health concern is posed by consumption of seafood caught in or near Ferry Creek that may contain Raymark waste contaminants at levels of health concern.

RECOMMENDATIONS AND PROPOSED ACTIONS

The ATSDR recommends that the regulatory/enforcement agencies (EPA, CTDEP, and the town of Stratford) take the following actions with continued cooperation and coordination with the health agencies (ATSDR, CTDOH, and the town of Stratford):

1. Dissociate the public from areas where exposure to Raymark waste at levels of health concern can occur.
2. Continue surface soil (0-3 inches) sampling/screening efforts for asbestos, lead, and PCBs in residential yards adjacent to areas where waste has been identified on or near the ground surface. If contaminants are found at levels of health concern, implement measures to cease exposure.
3. Continue efforts to identify other locations where Raymark waste was used as fill material and conduct appropriate sampling and mitigation if necessary.
4. Sample interiors of homes adjacent to areas of exposed waste and/or where yard soil screening results indicate contaminants at levels of health concern for free asbestos fibers, lead, and PCBs. If contaminants are found at levels of health concern, implement measures to cease exposure.
5. Conduct sediment sampling of Ferry Creek and its junction with the Housatonic River and seafood sampling to determine if site-related contaminants are present at levels of health concern. The sampling plan should be a

cooperative effort among all agencies involved to ensure that the results can be used for public health and regulatory/enforcement purposes.

6. Conduct an area well survey to ensure that groundwater is not in use for potable purposes. If private wells are found, ensure that well users are not exposed to site-related contaminants at levels of health concern.
7. Establish controls to require soil sampling and analyses in areas of Stratford where Raymark waste material may have been placed prior to conducting any invasive activities (e.g., water line installation, sewage line installation, maintenance of buried line, construction, grading) to avoid health hazards to workers or others by bringing buried waste material to the ground surface. If waste material is found and invasive activities are necessary, all regulations for worker protection and hazardous material handling and disposal should be followed.
8. Consider the Raymark property and other locations where Raymark waste is present at levels of health concern for inclusion on the EPA National Priorities List, and/or use other statutory or regulatory authorities as appropriate to characterize the areas of concern and take necessary action.

ATSDR and CTDOH will continue the following actions:

1. Provide recommendations for environmental sampling to enforcement/regulatory agencies to ensure that sampling results can be used to identify appropriate public health actions and exposure mitigation.
2. Continue to evaluate environmental and other sampling data to determine if other sources of exposure to Raymark waste contaminants are of public health concern.
3. Assist the enforcement/regulatory agencies in determining whether the proposed remedies and the contingency plans during remedy implementation for the areas of concern will be protective of public health.
4. Conduct a public health assessment and continue to provide health consultations to review environmental, health outcome, and community health concern information and determine appropriate additional follow-up actions.

On May 19, 1993, the information in this Public Health Advisory underwent review by the ATSDR Health Activities Recommendation Panel (HARP) and the CTDOH to determine appropriate follow-up health activities for the potentially affected residents of Stratford. Based on HARP recommendations, ATSDR, CTDOH, and the town of Stratford, will:

1. Conduct blood lead testing to determine if pregnant women, infants; and young children who live adjacent to or frequent the locations where waste has been identified have been exposed to lead at levels of public health concern. If elevated blood leads are found, ATSDR and the CTDOH will make recommendations regarding health follow-up. ATSDR and CTDOH will coordinate with EPA Region I, CTDEP, and the town of Stratford to identify and eliminate the site-related source of lead. If the lead is from a non site-related source, ATSDR and CTDOH will coordinate with the town of Stratford to ensure that the source is eliminated.
2. Review available health data to evaluate the occurrence of adverse health outcomes in the community that may be plausible from exposure to asbestos, PCBs, lead, and other possible contaminants from Raymark waste.
3. Based on the results of the health data review, determine appropriate follow-up health actions.
4. Develop a comprehensive community health education strategy to continue community health education efforts.
5. Continue health professional education efforts to advise local health care providers and public health professionals of the nature and possible consequences of exposure to contaminants in Raymark waste. The education effort will include providing such information as the contaminants of concern, pathways and routes of exposure, symptoms of exposure, and testing and treatment, if known.

For additional information, please contact the ATSDR at the following address:

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19. ATSDR Draft Toxicological Profile for Selected PCBs. October 1991.

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 4 - ARAR Tables

TABLE 4-2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
State Regulatory Requirements	Connecticut Cleanup Standard Regulations (22a-133K CGS)	Applicable	The regulations define minimum hazardous waste site remediation standards, specify numeric criteria for cleanup of soils and groundwater, and specify a process for establishing alternative, site-specific cleanup standards.	The regulations will be adhered to when determining soil cleanup standards.
Criteria, Advisories, and Guidance	TSCA PCB Spill Clean-up Policy (40 CFR 761.120-135)	To Be Considered	This policy applies to recent PCB spills and establishes clean-up levels for PCB spills of 50 ppm or greater at 10 ppm for non-restricted access areas and 25 ppm for restricted access areas.	Standards will be considered as guidelines for soil cleanup at the ballfield study area to address PCB contamination.
	EPA Risk Reference Doses (RfDs)	To Be Considered	RfDs are dose levels developed by EPA for use in estimating the non-carcinogenic effects of exposure to toxic substances.	EPA RfDs will be used to assess health risks due to exposure to noncarcinogenic contaminants present at the site.
	EPA Carcinogen Assessment Group Potency Factors	To Be Considered	EPA Carcinogenic Potency Factors (CPFs) are used to compute the individual incremental cancer risk resulting from exposure to carcinogens.	CPFs were used to assess health risks due to exposure to carcinogens present at the site.
	Guidance on Remedial Actions at Superfund Sites with PCB Contamination (EPA/540/G-90/007, August 1990)	To Be Considered	Describes various scenarios and considerations pertinent to determining the appropriate level of PCBs that can be left in each contaminated media to achieve protection of human health and the environment.	This guidance was considered in determining the appropriate level of PCBs that may be left in the soil.

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Raymark Shore Road, CT

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TABL. 2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT
 PAGE 2 of 6

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements	RCRA - General Facility Standards (40 CFR 265.10 - 265.18)	To be considered	General facility requirements outline general waste analysis, security measures, inspections, and training requirements.	Removal actions conducted would be constructed and operated in accordance with the substantive provisions of this requirement.
	RCRA - Preparedness and Prevention (40 CFR 265.30 - 265.37)	To be considered	Outlines requirements for safety equipment and spill control.	Safety and communication equipment would be maintained at the site and local authorities would be familiarized with the site operations, in accordance with the substantive provisions of these requirements.
	RCRA - Contingency Plan and Emergency Procedures (40 CFR 265.50 - 265.56)	Applicable	Outlines requirements for emergency procedures to be used following explosions, fires, etc.	Contingency plans would be developed and response activities would be implemented in accordance with the substantive provisions of these requirements.
	RCRA - Groundwater Monitoring (40 CFR 265.90 - 265.93)	To be considered	Details requirements for groundwater monitoring and responding to releases from Solid Waste Management Units.	A groundwater monitoring program would be implemented under the remedial program (not this removal action) accordance with the substantive provisions of these requirements.
	RCRA - Closure and Post-Closure (40 CFR 265.110 - 265.120)	Applicable	Details requirements for closure and post-closure of hazardous waste facilities.	Removal actions implemented under this alternative would be designed to meet the substantive provisions of this requirement.

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Raymark-Shore Road, CT

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TABLE 4-2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT
 PAGE 3 of 6

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements (Continued)	RCRA - Landfills (40 CFR 265.310)	Applicable except for (40 CFR 265.310(b)(2))	Includes requirements for the closure and post-closure of landfills.	This would comply since a final cover would be designed and constructed to meet the ARAR. Site will be covered, not capped.
	TSCA - PCB Storage and Disposal (40 CFR 761.60, .75, .79)	Applicable to PCBs at 50 ppm or greater, removed after February 17, 1978.	This regulation establishes standards for the storage, disposal, and incineration of PCBs at a concentration greater than 50 ppm.	This would comply with the exception of certain landfill requirements which will be waived under TSCA. Site will be covered, not capped, after excavation.
	CAA NESHAPS (40 CFR 61 Subpart M (61.145, 61.150, 61.151) Subpart M, 61.154	Applicable Relevant and Appropriate	These regulations specify requirements regarding removal, management, and disposal of asbestos.	Handling and disposal of soils containing asbestos and building demolition debris containing asbestos would comply with the substantive provisions of these regulations. Site will be covered, not capped, after excavation.
State Regulatory Requirements	Connecticut Air Pollution Regulations - Fugitive Dust Emissions (RCSA 22a-174-18b)	Applicable	Requires that reasonable precautions be taken to prevent particulate matter from becoming airborne during demolition and construction activities and material handling operations.	Activities involving soil excavation or handling, and cap construction would be conducted in a manner to minimize fugitive dust emissions from the facility.
	Connecticut Hazardous Waste Site Management Regulations (Sec. 22a-449(c)-105, RCSA)	Applicable	These regulations outline requirements for the management and disposal of hazardous wastes, and the construction, location, operation, and closure of hazardous waste treatment, storage, and disposal facilities. These regulations incorporate by reference substantial portions of 40 CFR 265 (RCRA).	This alternative would comply with those portions of the regulations that are more stringent than the corresponding federal RCRA regulations cited herein.

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Raymark Shore Road, CT

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TABLE 4-2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT
 PAGE 4 of 6

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
State Regulatory Requirements (cont'd)	Connecticut Cleanup Standard Regulations (22a-133K CGS)	Applicable	The regulations define minimum hazardous waste site remediation standards, specify numeric criteria for cleanup of soils and groundwater, and specify a process for establishing alternative, site specific cleanup standards.	An excavation alternative would need to comply with portions of these regulations.
	Connecticut Water Quality Standards (issued pursuant to Sec. 22a-426 CGS)	Applicable	Establishes designated uses for groundwater and identifies the criteria necessary to support these uses.	An excavation alternative would need to comply with water quality standards since actions are taken to minimize further degradation of groundwater.
	Connecticut - Air Pollution Control - Control of Odors (Sec. 22a-174-23 RCSA)	Applicable	This regulation prohibits emission of substances that constitute nuisances because of objectionable odors. Several compounds have specific concentration limits.	This would apply during implementation of the site cleanup.
Criteria, Advisories, Guidance	TSCA PCB Spill Clean-up Policy (40 CFR 761.120-135)	To Be Considered	This policy applies to recent PCB spills and establishes cleanup levels for PCB spills of 50 ppm or greater at 10 ppm for non-restricted access areas and 25 ppm for restricted access areas.	This policy would be considered in the management of PCB contamination.
	Guidance on Remedial Actions of Superfund Sites with PCB Contamination (EPA/540/G-90/007, Aug. 1990)	To Be Considered	Describes various scenarios and considerations pertinent to determining the appropriate level of PCBs that can be left in each contaminated media to achieve protection of human health and environment.	This guidance would be considered in the management of PCB contamination, and it would be consistent with this guidance.

TABLE 4-2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT
 PAGE 5 of 6

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Criteria, Advisories, Guidance (cont'd)	CAA NAAQS for Particulate Matter (40 CFR 50.6)	To Be Considered	The particulate matter NAAQS specifies maximum primary and secondary 24 hour concentrations for particulate matter in the ambient air. These ambient air concentrations are not designed to apply to specific sources; rather, states may promulgate State Implementation Plan emission limits applicable to sources, which would result in attainment and maintenance of the NAAQS. Connecticut has not promulgated any particulate matter emission limits applicable to this source.	Fugitive dust emissions from soil-waste handling activities would be minimized with temporary enclosures and dust suppressants, if necessary. These measures should be sufficient to prevent any exceedances in the ambient air of the 150 $\mu\text{g}/\text{m}^3$ 24-hour primary standard for particulate matter.
	U.S. EPA Technical Guidance - Final Covers of Hazardous Waste Landfills and Surface Impoundments (EPA/530-SW-89-047)	To Be Considered	Provides technical specifications for the design of multi-layer covers at landfills where hazardous wastes were disposed.	This guidance would be considered in the design of the cover and associated systems after excavation.
Federal Regulatory Requirements	RCRA - Floodplain Restriction for Solid Waste Disposal Facilities and Practices (40 CFR 257.3-1)	Applicable	Solid waste practices must not restrict the flow of a 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources.	This would apply as the site is in the flood plain.

RI992750

4-17

Raymark-Shore Road, CT

DRAFT

TABLE 4-2
 CHEMICAL-SPECIFIC ARARs AND TBCs
 EXCAVATION
 DRAFT ENGINEERING EVALUATION AND COST ANALYSIS
 RAYMARK-SHORE ROAD, STRATFORD, CONNECTICUT
 PAGE 6 of 6

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION
Federal Regulatory Requirements (cont'd)	Floodplain Executive Order (EO 11988) Statement of Procedures on Floodplain Management and Wetlands Protection, (40 CFR Part 6, Appendix A)	Applicable	Under this order, federal agencies are required to reduce the risk of flood loss, minimize the impact of floods, and to restore and preserve the natural and beneficial value of floodplains.	The potential effects on the floodplain will be considered during the development and evaluation of excavation alternatives. All practicable measures will be taken to minimize adverse effects on floodplains.
	RCRA - Floodplain Restrictions for Hazardous Waste Facilities (40 CFR 264.18 (b))	Applicable	A hazardous waste facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout or to result in no adverse effects on human health or the environment if washout were to occur.	This ensures that any proposed hazardous waste facility located in the portion of the site which is in the floodplain will comply with these requirements.

RI99275D

4-18

Raymark Shore Road CT

DRAFT

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 5 - EE/CA Fact Sheet (Proposed Plan)



RAYMARK

BULLETIN #22



July, 1999

Engineering Evaluation/Cost Analysis: Shore Road Study Area

This fact sheet describes the removal action alternatives considered and the one preferred by the U.S. EPA to address soil and subsurface soil contamination in the areas along Shore Road in Stratford, Connecticut.

Introduction

As part of the Superfund cleanup program for the Raymark disposal sites in Stratford, EPA is planning a removal of contaminated material in the Shore Road area beginning this fall.

Community input during the decision-making period is critical to selecting an alternative that not only cleans up the site and meets regulatory requirements, but also is acceptable to the affected communities.

This fact sheet provides an overview of the EE/CA document which is available in the reference section of the Stratford Public Library. EPA is accepting public comments on the cleanup plan from July 14 to August 12, 1999. You don't have to be an expert to comment. If you have a concern or preference, EPA and CTDEP want to hear it before making a final decision on how work should proceed to protect the community. Information about the ways to provide comment and a listing of who to contact for more information appear on page 3.

The EE/CA contains:

- An Executive Summary
- Site Characterization Summary
- Human Health Risk Evaluation
- Ecological Evaluation
- Removal Action Objectives
- Removal Action Alternatives

History of the Raymark Cleanup

The Raymark Facility on East Main Street in Stratford, Connecticut operated from 1919 to 1989. Raymark manufactured automotive and heavy brake friction components using asbestos, lead, copper, and a variety of adhesives and resins. As a result of manufacturing and waste-disposal practices, soils at the Raymark Facility became contaminated with many of these pollutants. Manufacturing wastes were routinely disposed of in low-lying areas at the Raymark Facility to create space for Raymark Facility expansions. In addition, Raymark routinely gave away its excess manufacturing wastes for use as fill within the Town of Stratford.

In 1993, the Federal Agency for Toxic Substances and Disease Registry performed a health assessment in Stratford and issued a Public Health Advisory for the Raymark Facility and locations around the Town of Stratford where Raymark waste had been deposited. In response, the U.S. Environmental Protection Agency (EPA) and the Connecticut Department of Environmental Protection (CTDEP) sampled numerous properties and sites in Stratford and removed waste material from the Raymark facility and various municipal, commercial, and residential areas. After these "removal actions," EPA and CTDEP began more detailed studies to identify appropriate cleanup solutions for the remaining contaminated areas. Shore Road is one of these areas.

Preliminary Cleanup Work at Shore Road

The Shore Road Study Area (see map, Page 4) is approximately 4 acres, and includes a 1,350-foot section of Shore Road, the Housatonic Boat Club, and a small portion of the eastern slope of the Shakespeare Theater property. In 1993, the CTDEP found elevated levels of asbestos, lead, and PCBs in the soil at this study area, and responded by capping the materials in place with a geotextile (a permeable plastic-like fabric designed to minimize soil erosion and dust) and 6 inches of wood chips. While this eliminated the immediate hazards posed by the contaminated soil, it was not intended to be a permanent solution.

Permanent Cleanup Needed

This temporary cap is now showing signs of wear caused by traffic, flooding, and erosion. Because the temporary cap is wearing out and increasing the likelihood of public exposure to contaminated soils at the Shore Road Area, EPA has decided to undertake a Non-Time-Critical Removal Action at Shore Road. This removal action is called "Non-Time-Critical" because there is more than 6 months' planning time available before on-site activities must be initiated. Despite the name, this action will result in a faster cleanup than if EPA had continued to work on Shore Road as part of the ongoing Superfund Remedial Investigation of the various Raymark disposal sites in Stratford.

Shore Road Engineering Evaluation/Cost Analysis

To conduct a Non-Time-Critical Removal Action, EPA must develop an Engineering Evaluation/Cost Analysis (EE/CA), a document that identifies contaminants and risks at the site, examines possible removal actions for the Shore Road Study Area, and presents EPA's recommended alternative. On July 9th, EPA formally released the *Draft Final Engineering Evaluation/Cost Analysis - Raymark-Shore Road*. This document is available for public review at the EPA information repository at the Stratford Public Library Reference Desk.

The Draft Final EE/CA determined that occasional recreational users exposed to the

most polluted parts of the Shore Road Area would face an unacceptable level of risk if no action were taken to prevent their contact with contaminated soils. The EE/CA evaluated a variety of technological options for site cleanup, including no action, limited action, on-site containment, contaminant removal and disposal, and treatment. Several of these options were eliminated because they were technically impractical, because they would not fully comply with Connecticut or federal environmental protection regulations, or because they did not adequately eliminate all the risks posed by site contamination. For example, the No Action alternative was eliminated because it did not protect human health and the environment. Various forms of on-site soil treatment were also eliminated from consideration because they could not reduce the level of contaminants to safe levels. On-site containment was eliminated because frequent flooding at the site (it is in the Housatonic River's flood plain) could damage the impermeable containment cap, and because the construction of an on-site containment facility in a Coastal Management Area would violate Connecticut environmental regulations.

Description of Alternatives

The EE/CA carries forward three potential removal alternatives for further in-depth analysis. For each alternative, clean fill would be brought in and used to restore all areas to their original elevations along with additional restoration activities to return the area to its pre-excavation condition.

Each of these three alternatives is evaluated using two cost options: one for in-town temporary storage (with permanent in-town disposal cost and location to be determined at a later date) and one for out-of-town disposal. These three alternatives are:

1. Excavation of 2 or 4 feet of soil-waste/fill (depending on existing site conditions) and site restoration. The estimated volume of soil that would be removed is 22,600 cubic yards with an estimated cost of \$3.8 million for in-town storage and \$68.5 million for out of town disposal.

2. Excavation of 2 feet of soil-waste/fill and paving of entire Study Area and site restoration. The estimated volume of soil that would be removed is 12,700 cubic yards with an estimated cost of \$3 million for in-town storage and \$39 million for out of town disposal.
3. Excavation to a 5.5-foot depth (the depth to the groundwater table) and site restoration. The estimated volume of soil that would be removed is 34,786 cubic yards with an estimated cost of \$5.3 million for in-town storage and \$105 million for out of town disposal.

Based on a detailed analysis of these alternatives, EPA recommends Alternative 3 - excavation to a 5.5 foot depth with site restoration and in-town storage. This alternative is most protective of human health and the environment in the long term. It is the only one of the three evaluated alternative that addresses all of the Connecticut state regulations for site cleanup since excavation is down to the groundwater table. This draft recommendation will be reviewed by EPA, Connecticut regulators, and the public before a final option is selected.

The decision will be documented this September in an Action Memorandum which presents the selected alternative, explains the rationale for the selection, and provides responses to comments and concerns raised during the public comment period. Actual cleanup work would begin this fall.

More Information

More detailed information is available in the EE/CA. Copies of the EE/CA, as well as other information about the Raymark Superfund Site, are available for review in the reference section of the Stratford Public Library, 2203 Main Street, Stratford during normal library operating hours.

Learn More About EPA's Plan

EPA will describe the Shore Road EE/CA at a poster session which will be followed by a presentation with a formal hearing at a public meeting.

This public meeting and hearing will be held on:

Thursday, August 5 (location to be announced)
 Poster session: 6:00 - 6:30 p.m.
 Informational Meeting & Hearing 6:30 - 8:00 p.m.

What Do You Think?

There are two direct ways to provide formal comment on the plan:

1. Offer verbal comments during the public hearing to be held on August 5, 1999 or
2. Submit written comment during the public comment period that will extend from July 14, 1999 to August 12, 1999 to:

Ron Jennings, Project Manager
 U.S. EPA Region 1
 1 Congress Street, Suite 1100 (HBT)
 Boston, MA 02114-2023

For More Information, please contact:

U.S. Environmental Protection Agency
 EPA Toll Free (all staff): 1-888-372-7341

Ron Jennings, Project Manager
 617-918-1242 telephone, 617-918-1291 fax
 Jennings.Ron@epamail.epa.gov

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 617-918-1342 telephone, 617-918-1294 fax
 Leighton.Richard@epamail.epa.gov.

Jim Murphy, Community Involvement
 617-918-1028 telephone, 617-918-1029 fax
 Murphy.jim@epamail.epa.gov

Eve Vaudo, EPA Enforcement Counsel
 617-918-1089 telephone, Vaudo.eve@epamail.epa.gov

CT Department of Environmental Protection

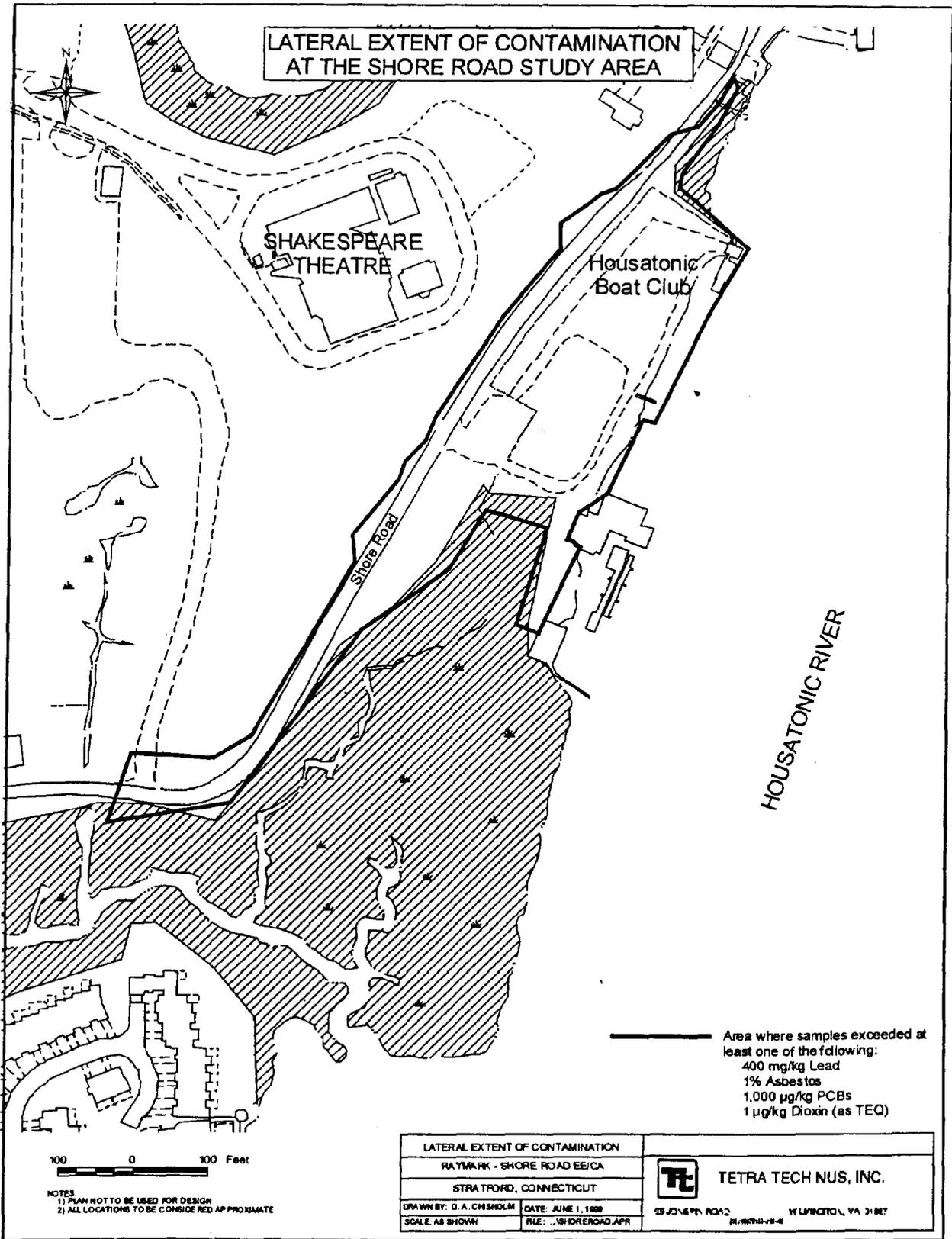
Ron Curran, Project Manager
 860-424-3764 telephone, 860-424-4057 fax
 Ronald.curran@po.state.ct.us

Connecticut Department of Public Health

Jennifer Kertanis, Epidemiologist
 860-509-7742 telephone, 860-509-7785 fax
 Jennifer.Kertanis@po.state.ct.us

Stratford Health Department

Elaine O'Keefe, Director
 203-385-4090 telephone, 203-381-2048 fax
 e-okeefe@earthlink.com



**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 6 - Response to Comments

**Raymark Superfund Site
Operable Unit #5
Shore Road Engineering Evaluation/Cost Analysis
Responsiveness Summary**

This document gives a complete summary of significant comments received by EPA during the public comment period on the Shore Road Engineering Evaluation/Cost Analysis (EE/CA). Shore Road is a portion (Operable Unit #5) of the Raymark Superfund Site.

Overview of the EE/CA Report and the public participation process:

EPA released the Shore Road EE/CA for public comment on July 9, 1999. The EE/CA presented three approaches, or alternatives, to addressing contamination found at the Shore Road Study Area. On July 14, 1999 EPA held a public meeting to present the alternatives evaluated in the EE/CA. In response to comments received at this meeting, EPA developed an addendum to the EE/CA (July 29, 1999) that considered an additional alternative for clean-up actions. The four alternatives presented in the EE/CA and addendum are described below:

- Alternative 1: Excavate the entire Shore Road Area to depths of either 2 or 4 feet, backfill all areas that were excavated to 2 feet with clean fill and pave with asphalt or the equivalent to grade, backfill all areas that were excavated to 4 feet with clean fill to grade, provide temporary and/or permanent storage of excavated materials in town, and implement land use restrictions. This Alternative did not meet Connecticut ARARs for groundwater.
- Alternative 2: Excavate the entire Shore Road Area to a depth of 2 feet, backfill with clean fill, pave the entire area with asphalt or equivalent to original grade, provide temporary and/or permanent storage of excavated materials in town, and implement land use restrictions. This Alternative did not meet Connecticut ARARs for groundwater.
- Alternative 3: Excavate the entire Shore Road Area to the groundwater (an average depth of 5.5 feet), backfill with clean fill to grade, restore site to preconstruction conditions, and provide temporary and/or permanent storage of excavated materials in town. This Alternative met all Connecticut ARARs.
- Alternative 4: Cap all contaminated soils in place along the bank of the Housatonic River, raise the elevation of the area approximately 5 feet for cap stability, ensure long term maintenance of the cap, and implement land use restrictions. This Alternative met all Connecticut ARARs.

The EE/CA Report and addendum were placed into the Stratford town library on July 9, 1999 and July 29, 1999, respectively. EPA mailed copies of a fact sheet that summarized the EE/CA to the State of Connecticut (including both state and federal representatives), local officials, local residents, and other interested parties. EPA published a notice of a proposed clean-up alternative (Alternative #3 - excavation to 5.5 feet) from the EE/CA and of public meetings in two newspapers of general circulation in the Site area. EPA held a public informational meeting on July 14, 1999 to present the EE/CA and EPA's preferred alternative and held a public hearing on August 4, 1999. The public comment period began on July 15, 1999 and ended on September 14, 1999 after a four week extension.

Approximately 60 people attended the public hearing with 10 speaking and providing comments. In addition to comments received during the hearing, EPA received 1,110 written comments about the Shore Road EE/CA, including comments from the Connecticut Department of Environmental Protection (CTDEP) and the Stratford Health Department.

Over 200 people signed comments letters or spoke at the public hearing to oppose any movement of materials from the Shore Road Area and, because of this, were in favor of Alternative #4 - capping. The majority of written comments were signed form letters (a representative copy is included in Appendix A of this Responsiveness Summary). Many of these commentors have expressed concerns of materials potentially being transported to another portion of town, specifically the former Raybestos Memorial Ballfield (the "Ballfield") and consolidated with other Raymark materials that have historically been disposed at this location and are also in need of remediation. The primary concerns that have been expressed are of potential health impacts from transporting and disposing of asbestos-contaminated materials in a residential neighborhood. Concerns have also been raised regarding truck traffic, noise, and that fact that the area has already been impacted by cleanup activities from the remediation of the Raymark facility which is located next to the Ballfield.

Almost 900 people wrote letters to support the selection of Alternative #3 - excavation to 5.5 feet. Many of these comments (about 650) were signed form letters (a representative copy is included in this Responsiveness Summary). Many commentors in favor of this alternative identified themselves as users of the Housatonic River or of Long Island Sound. Some of them also noted that they were members of the Housatonic Boat Club, which owns property that is part of the study area. Generally, these comments expressed concern that a landfill in the Shore Road Area (adjacent to the Housatonic River and within the river's floodplain) would not be secure in the face of the region's history of storms and hurricanes. Many suggested that capping the waste in place would not be a permanent solution because a coastal landfill would eventually succumb to erosion and result in additional exposure to contamination. Although some of these commentors acknowledged the concerns of Stratford residents who might be affected by a selected remedy of excavation, they felt that removal of contamination from the Shore Road area was a better long-term solution than capping the materials in place.

A few people (less than 10) suggested Alternative #2 (limited excavation) or a No Action

alternative.

Public Comments and EPA Responses:

Significant comments and EPA's responses are summarized below. Please note that EPA has received several comments concerning liability issues. Because the public comment period is intended to obtain comments on the removal action alternatives discussed in the EE/CA, EPA will not be responding to liability issues in this Responsiveness Summary.

The comments have been grouped according to topic as follows:

Topic: Planning / Coordination with other Raymark cleanups

Comment: *I am confused about the severity of the problem at Shore Road. Why has the Shore Road area been separated out from the rest of the Raymark Site?*

Response: EPA typically divides large Superfund Sites into smaller, more manageable pieces or areas. EPA refers to these smaller areas as operable units (OUs). The Shore Road Study Area is simply one of the areas of the Raymark Site known as OU#5. All of the OUs at Raymark have been sampled and it is the sampling results that determine the extent and degree of contamination and associated risks. The Shore Road Area has been sampled three separate times: in May 1993, April 1994, and March 1999. These sampling results have found that the area is heavily contaminated with lead, PCBs, asbestos, and dioxins. While these contaminants exist at other locations in town where Raymark waste has been found, the Shore Road contaminant levels are high enough and the area is accessible enough to be a more immediate concern to public health. When this contamination was initially found in 1993 and 1994, CTDEP addressed the problem with a temporary measure of covering the contaminated soils to prevent direct exposures. This response was acceptable when first installed, however, the covering has now degraded to the point that it no longer prevents contact with the contaminated soils. Because the soils are continuing to be uncovered as the asphalt of Shore Road breaks apart and the temporary cap installed by CTDEP fails, EPA decided to initiate a Removal Action at the area. The first step in the Removal Action process is the EE/CA report.

Comment: *What is the total amount of Raymark waste (including from Shore Road and the commercial properties) that will need disposal? Will there be enough room for it all at the ballfield? If not, where will the waste be disposed of, especially if it will not be accepted out of state? Has anybody approached owners of the commercial properties to see if wastes can be landfilled there, perhaps in exchange for some kind of compensation?*

Response: The total amount of Raymark waste needing disposal is unknown. It is likely that this will remain an unknown until all of the materials from all of the areas have been excavated

and addressed. The maximum amount of Raymark waste present in Stratford is around 1,000,000 cubic yards. It is possible that the total amount that will be in need of disposal or consolidation will be less than half of this estimated maximum amount. This is because EPA will make every effort to contain contaminated soils in the areas from which they were found.

There is not enough room to place all of the Raymark waste found throughout Stratford at the Ballfield. The location and type of disposal for Raymark wastes will depend on the specific cleanup remedy selected for each individual parcel of property. Consolidation of contaminated materials may be possible at some locations and not at others and EPA will make every effort to minimize the amount of material to be transported from one location to another. Discussions of cleanup remedies for commercial properties, however, have not yet occurred with the various property/business owners to date. This effort is expected to begin in the spring of 2000.

Comment: *The people who live near the ballfield don't want the waste. A two- to three-year project bringing 850,000 cubic yards or more of waste from other smaller Raymark sites to the ballfield, which is near a residential area with children, is scary.*

Response: As stated earlier, the total amount of Raymark waste is unknown. While the proposed remedy for the Ballfield has not been completed, EPA currently has no intentions of proposing to consolidate anywhere near 850,000 cubic yards of materials at this location. While any consolidation of waste at the Ballfield will undoubtedly be a major inconvenience to nearby residents, there will be a need for significant construction activities at this location. There is currently a large amount of Raymark waste that already exists at the Ballfield due to Raymark's historical disposal practices. This contaminated material, which is exposed in some areas, will need remediation and will be addressed in the near future.

Precautionary measures will be taken to ensure that if material is transported and consolidated at the Ballfield, there will not be adverse environmental impacts to nearby residents.

Comment: *If the ballfield were not available, what site in town would EPA use to dump this material?*

Response: EPA considered both in-town and out-of-town disposal locations. If no in-town disposal locations were available, then out-of-town disposal would be evaluated against other site cleanup options. The suitability of consolidation at the Ballfield or any other location will be carefully studied before EPA makes any final decisions about permanent Raymark waste disposal. If any location is determined to be unsuitable, EPA will not select it as a permanent disposal site.

Comment: There is no groundwater chemistry available for the ballfield. Without that

information we can't determine if a cap is even necessary at the ballfield, nor can we determine its suitability as a landfill site for Shore Road wastes.

Response: Capping prevents direct public exposure to contaminants in soils and minimizes the leaching of contaminants above the water table into the groundwater. For these reasons, it is possible for EPA to make a preliminary decision that capping is an appropriate cleanup component before all groundwater data has been fully evaluated.

The groundwater beneath the entire Raymark Site is being evaluated in a single comprehensive plan. The plan, called a Remedial Investigation, will be available to the public next year, and will help EPA determine the appropriate response action for groundwater in the area.

Comment: *I believe Ferry Creek is a bigger problem than Shore Road because it is more heavily used.*

Response: EPA has divided Ferry Creek into three separate areas or OUs: Upper Ferry Creek, Middle Ferry Creek, and lower Ferry Creek. Preliminary sampling results have found contamination throughout Ferry Creek but, to date, this contamination has not resulted in the same degree of risk that was found at the Shore Road Area. The data is currently being evaluated and will be presented in Remedial Investigation Reports scheduled to be available next year.

Comment: *Freezing winter weather, Superfund money running out, EPA budget cutbacks – all of these seem to be things that can stop the cleanup. Has anyone put together a plan that shows how much total waste there is, how long will it take until the entire cleanup – not just Shore Road – is complete, and how much money it will all cost? EPA should have a comprehensive plan for the site before it starts moving wastes around the Town. People want to know: Where is all of the waste going? How is it going to fit? How tall will the landfill be? Will the plan for the landfill ensure that water runs off in a direction other than towards the present housing area? Is the cleanup going to affect the health of ballfield neighbors?*

Response: EPA is currently considering developing a "Master Plan" in response to this comment. A Master Plan will be beneficial in enabling the public to understand the entire approach for the Raymark Site. This approach, however, will also effectively slow down the cleanup effort. It will require that all investigations at all locations be complete before any remediation efforts begin. This will postpone some areas that could be moving forward with construction or cleanup activities while other areas were completing the investigation phase. It would also mean that all areas with Raymark wastes would be ready for construction activities at the same time, which would significantly increase the amount of truck traffic and construction equipment throughout Stratford. Regardless of these limitations, EPA is evaluating an approach to enable a better understanding of future activities.

Design for runoff and drainage are a component of the cleanup plan for all locations that require remediation efforts.

Comment: *EPA seems to be moving wastes around the Town of Stratford without a long-term, comprehensive plan.*

Response: EPA last moved wastes between 1994 and 1996 as part of the removal of contaminated wastes from residential properties in Stratford and the Wooster School. These wastes were placed under a cap at the Raymark Facility property. No other wastes have been moved. The EPA recommended cleanup plan for Shore Road does involve moving wastes to a suitable location within the town of Stratford. The temporary and/or permanent storage location of any excavated materials will be part of an overall cleanup strategy for Stratford. EPA's sequence of actions considers all of the areas that need to be cleaned up.

Topic: Preferred Alternatives

Comment: *The best alternative for all Raymark sites, including Shore Road, is capping them in place, even if it is difficult to do. The people of Stratford should not have asbestos being trucked through town for two to three years.*

Response: Capping in place does make sense for some areas or OUs, provided the location will be secure for many years to come. In the case of Shore Road, EPA believes that the best solution would be to excavate the contaminated soils from the area which, due to its location along the bank of the Housatonic River, is environmentally sensitive. EPA believes this to be the most effective, long-term solution. Transportation routes for waste will be selected with the advice and concurrence of Town of Stratford officials, and all precautionary measures will be coordinated with the State and local Health Departments.

Comment: *With Alternative #3, you are asking a whole neighborhood full of people to endure the stress of not knowing whether their health is being compromised as well as the stress of a two-year construction project in their back yards. We do not want more hazardous waste dumped near our back yards. Raybestos Memorial field already has enough waste. We feel if the field would get its permanent cap as-is, we would be at no further risk of exposure. The health of the neighbors of the ballfield should be the prime consideration before EPA proceeds with its plan.*

Response: EPA concurs that the health of everyone, neighbors, workers, and others are of the highest concern. EPA will take all appropriate precautionary measures and will not compromise the health of anyone. EPA's goal is to eliminate the health risks created by Raymark when

Raymark dumped waste throughout Stratford. The capping of the Ballfield, with or without the inclusion of Raymark wastes from other areas or OUs in Stratford, will improve the local environment by protecting the public from exposure to these wastes. EPA will ensure that sufficient safeguards are put in place during the cleanup activities to protect everyone, especially site neighbors. If consolidation of Raymark wastes is performed at the Ballfield, it will minimize the overall construction impacts in town by performing the remediation of the Ballfield in parallel with other Raymark OU cleanups.

Comment: *I appreciate EPA's responsiveness in coming up with a fourth cleanup alternative (capping Shore Road wastes in place).*

Response: Thank you.

Comment: *The City of Milford is concerned about Alternative #4 because of the potential for erosion and leaching in an area so close to the banks of the Housatonic River. Milford feels that remediation that does not rely on long-term vigilance and an ongoing economic commitment is preferable. However any remediation that is judged to be reliable and permanent by EPA engineers would be acceptable to the City.*

Response: Alternative #4 could be engineered and maintained to meet legal requirements and protect the Housatonic River from erosion and leaching of the Shore Road Area's wastes. It would, however, require maintenance indefinitely at a significant cost. Both EPA and CTDEP prefer Alternative #3, which removes the contaminated material from an environmentally sensitive area. Alternative #3 also requires minimal long term maintenance and limited land use restrictions.

Comment: *Why does Alternative #4 call for quarterly monitoring over 30 years? If there are problems with this alternative will funds be available for cleanup? Will Superfund still be in effect? Will Stratford have responsibility if it fails? What will be the environmental impacts of a failure of Alternative #4?*

Response: EPA requires 30 years of post construction monitoring at all locations where wastes are landfilled and capped in place. This is required to ensure that any selected containment remedy is actually effective and contamination is not finding its way into groundwater and the surrounding area.

Like any law, Superfund could be subject to changes in the political process. If changes were to occur, EPA cannot predict how such changes might effect the availability of funds or the responsibility for cleanup.

If Alternative #4 was implemented and were to fail, the cap would probably erode and the environmental impacts and associated risks would be similar to what they currently are. The concern, however, is the extent to which materials might be washed into the Housatonic River resulting in contamination of a much larger area.

Comment: *Alternative #4 is not feasible at all. We lost a seawall during a bad storm, and a similar flood could wipe out a landfill at Shore Road. Alternative #3, the most expensive alternative, is better.*

Response: EPA is also concerned with the long-term or permanence of capping the material in a flood zone of the Housatonic River and for this reason has recommended Alternative #3 - excavation to 5.5 feet - with potential treatment and partial replacement of the treated waste back into the Shore Road Study Area. Alternative #4 - capping, could be designed to withstand the estimated natural forces that might impact the area, however, the long term performance and effectiveness of the design could only be evaluated in time after the remedy was constructed.

Comment: *Would constructing an on-site waste management/containment facility in a Coastal Zone Management area violate federal or Connecticut laws or regulations?*

Response: No. Any on-site facility would be engineered to meet the intent of federal, state, and local requirements, including coastal zone management laws. The State of Connecticut has acknowledged that Alternative #4 would satisfy its regulations, but it has stated a clear preference for Alternative #3 in its comments to EPA.

Comment: *A homeowner adjacent to the Shore Road was concerned about the level of the ground in the area if the wastes there were capped. He did not want the level of the property changed, and he wanted to have input on EPA's course of action.*

Response: As noted above, EPA is recommending as its preferred solution Alternative #3 - excavation to 5.5 feet with potential treatment and partial replacement of treated waste into the Shore Road Study Area and temporary and permanent disposal of the remaining treated waste at a location within Stratford. Final site grades at the Shore Road Study Area will be similar to existing site topography under this alternative, and surface water runoff should not affect abutting property owners. These types of issues will be addressed during the design of the final cleanup.

Comment: *If the proposed cap at the Shore Road site (Alternative #4) were four feet above the flood level, would all of the sequential elements of the cap really be necessary?*

Response: The proposed cap is intended to be four feet above current grade, not flood level. Even with an additional four feet of material, the area would still be below the flood level of a 100 year storm event. The purpose of a multi-layer cap would not just be to keep out floodwaters but also to reduce or eliminate any infiltration of rainwater through the contaminants.

Comment: *The excavation of five feet of soil and its replacement with clean fill would ensure the full use of the Housatonic Boat Club property by its members, and enable the complete re-landscaping of the HBC property. This would improve the views from the Shakespeare Theater property, which is a necessary part of restoring the theater.*

Response: Any perceived value added to the restoration of the Shakespeare Theater or any other area due to the implementation of any alternative would simply be a side-benefit and not a criteria that EPA would use in alternative selection.

Comment: *The Shore Road contaminants should not be capped in place. Problems with such a cap include: the height of the cap – which could impede access to the Housatonic Boat Club, the high cost of construction and maintenance of a cap in a tidal zone prone to flooding, and the difficulty of designing a cap that would withstand a hurricane-force storm.*

Response: EPA shares these concerns. As stated previously, EPA is concerned with the long-term or permanence of capping the material in a flood zone of the Housatonic River and for this reason has recommended Alternative #3 - excavation to 5.5 feet with potential treatment and partial replacement of treated waste into the Shore Road Study Area and temporary and permanent disposal of the remaining treated waste at a location within Stratford. Alternative #4 - capping, could be designed to withstand the estimated natural forces that might impact the area, however, the long term performance and effectiveness of the design could only be evaluated in time after the remedy was constructed.

Comment: *A logical solution would be to remove the contaminated soil from the Shore Road area and barge it to a location offshore beyond the continental shelf where it would be dispersed by nature.*

Response: Offshore dumping of hazardous wastes is illegal due to harmful environmental impacts. This alternative was not evaluated.

Comment: *The best solution would put the Shore Road material in "full containment." This means more than a cap, it means selecting a site that is not at risk from flooding and hurricane and engineering a containment system that will merit recognition in 20-plus years as a model of "one done right the first time."*

Response: EPA agrees with this philosophy and for this reason has recommend excavating the material from the Shore Road Area. It should be noted, however, that every physical location contains uncertainties (e.g., flood, hurricanes, earthquakes, etc.). EPA will select a site and engineer a cost-effective containment system designed to withstand foreseeable natural forces.

Comment: *If, due to cost, contamination from Shore Road must remain in Stratford, then I am in favor of concentrating the fill at the Ballfield along with the fill already located there. It would be better for the town of Stratford to have one single location with contaminated soil versus multiple sites that are capped and a potential problem in the future. Shouldn't EPA be responsible for monitoring one single site in the future and not many individual ones located all over town?*

Response: EPA agrees that it is preferable to have fewer disposal areas. Once a property is capped, the State of Connecticut and thus, Connecticut taxpayers, may be responsible for long-term maintenance of the area. These costs are minimized with fewer disposal areas.

Comment: *EPA should cover the areas in question with a substantial asphalt paving and not otherwise disturb them. If this doesn't satisfy the letter of the law, EPA should adopt Alternative #2. This will be sufficiently protective and the costs will be reasonable.*

Response: Simply paving the Shore Road Study Area or implementing Alternative #2 would not meet Connecticut's Remediation Standard Regulations for the prevention of dermal contact or for groundwater protection. In addition, paving the area would increase surface runoff which may adversely impact the environment. EPA, the CTDEP, and most people who submitted comments during this comment period, do not support Alternative #2.

Comment: *Alternative #2 is the only feasible option for the Shore Road cleanup. This alternative offers the lowest cost and least amount of soil to be moved. EPA excavated at the Wooster and Short Beach soccer fields and allegedly brought clean fill back to the site. Because inferior topsoil was used by EPA, both sites are rocky with poor grass cover. The town cannot afford to correct the overpriced and unsatisfactory work that was done at these sites. Therefore I strongly urge EPA to use the lowest cost alternative for Shore Road. If money is available for the higher cost alternatives, then I suggest that it be spent on improving our deplorable fields at Wooster and Short Beach.*

Response: All of the alternatives presented in the EE/CA are feasible. Although Alternative #2 is less expensive, EPA does not support it for the reasons set forth in the response to the previous comment. Neither the CTDEP nor the majority of people who submitted comments to EPA support this alternative.

If Shore Road is excavated, clean fill will be replacing the excavated contaminated materials. Much of this clean fill will be covered by asphalt (Shore Road and a portion of the Housatonic Boat Club parking lot). The remainder will be landscaped similar to existing conditions.

Superfund money can only be spent on remediation of contaminated sites. The law does not allow for improvements beyond the remediation of contamination.

Comment: *If Alternative #4 is selected, this will set a precedent for all future remediation along Ferry Creek, and I am concerned that the costs associated with these landfills (O&M, sharply increased costs of capital improvements, land-use restrictions) would lead to future public ownership of these properties. If this alternative is chosen, EPA should provide funding up front for O&M and potential capital costs. One way to do this would be to put the difference in cost between Alternative #3 and Alternative #4 (\$1,018,948) in an interest-bearing escrow account that could be used to cover ongoing O&M and eventual capital costs. The commercial properties along Ferry Creek should be treated in a similar fashion. Remediation which leaves properties burdened with land-use restrictions impairs the properties' ability to provide local tax revenue. EPA must ensure the future viability of all properties in question.*

Response: Each parcel of land within each operable unit will be evaluated separately to determine the best cleanup approach. The selection of a cleanup alternative at one location does not set a "precedent" for cleanups at other locations.

The Superfund law requires the State of Connecticut to be responsible for 10% of the costs of remedial actions performed by EPA. In addition, the State is responsible for the operation and maintenance of remedial actions. EPA is in the process of evaluating sampling results from both the Ferry Creek Area and the commercial properties. The results of these investigations will be made available next year. Future viability or beneficial reuse of all areas is one of EPA's objectives.

Comment: *I am vehemently opposed to any and all proposals for cleanup beyond what has already been done. The cleanups are ludicrous and unnecessary. What has already leached out has not caused any provable health hazards, and the amounts of pollutants or contaminants still remaining do not pose a future hazard.*

Response: EPA disagrees. There are human health concerns from direct contact and ingestion of soils from the area. There are also concerns of impacts to the environment as high levels of PCBs have been found in eels and possibly fiddler crabs. Signs have been posted warning people not to consume eels from the area. The proposed cleanups respond to a situation that represents real risks to public health and the environment. To date, cleanups have focused on contaminated soils and sediment. When the investigation of groundwater is complete next year, the impacts of the leached contaminants will be evaluated.

Topic: Health & Safety Issues

Comment: *Asbestos is most dangerous when it becomes airborne. How can this material be pulled out of the ground, moved across town, and landfilled while making sure that no fibers get airborne over a two- to three-year period? Isn't it safer to leave it in place?*

Response: The Raymark Facility Site remediation was heavily monitored during its 2-3 year cleanup and capping. No significant levels of particulates over allowable standards were measured during this entire period. EPA had air monitors on the site personnel (who were directly in contact with the waste) as well as at the property boundaries. To ensure safety, EPA will take all reasonable precautionary measures including wetting the waste during excavation and transportation activities at the Shore Road Study Area. This reduces or eliminates airborne particulates. All data on air monitoring at the Raymark Facility is on file with the Health Department for the Town of Stratford. Both the State of Connecticut Health Department and the Stratford Health Department will actively be involved during air monitoring activities.

While leaving waste in place would reduce transportation concerns, it raises the issue of ensuring that the contamination remains covered at the Shore Road Study Area. As was stated in a previous response, leaving the waste in place would require an aggressive operation and maintenance program, run by CTDEP and paid for by Connecticut taxpayers, to ensure the continued protection of human health and the environment. The long-term costs of maintaining the integrity of a separate cover system at Shore Road would be eliminated if the wastes were excavated.

Comment: *What is the quantity of lead in the fill on the Housatonic Boat Club property? How does it compare to the amount of lead that might be in the soil around an old house that was painted with lead paint until 15 years ago?*

Response: The amount of soil contaminated with lead in the Shore Road Area is approximately 35,000 cubic yards. Some of the lead levels at the Shore Road Study Area are in excess of 10,000 mg/kg. The State of Connecticut requires soil cleanup if lead levels exceed 500 mg/kg. Lead in soil around an old home that was painted with lead paint could possibly reach unacceptable levels, and if so, should be a concern. Testing is required to determine concentration levels. Concerned homeowners should address this issue themselves.

Comment: *Near the Birdseye Boat Ramp, Stratford has a large outcropping of Serpentine, a mineral that is a variant of asbestos, according to one comment. Does EPA know about the relationship between naturally occurring and processed asbestos in the local ecology?*

Response: The relationship between the naturally occurring and process asbestos is known to

EPA. We are confident that the Raymark waste contamination at Shore Road is correctly categorized as process asbestos.

We are unsure if the large outcrop at the Boat Ramp is Serpentine. Fritts (1965) and Crowley (1968) mapped the bedrock in the area as muscovite schist. Furthermore, boring logs typically describe the cored rock as mica schist. Nevertheless, the Yale Museum contains a specimen of serpentinite that was collected in the 1800s by Professor Dana at a site called Oldfield Rock in Stratford. Percival (1842) also mentions the existence of "A ledge of Serpentine ... on the West bank of the Housatonic below Stratford Landing." The precise location of Stratford Landing is not known, but Oldfield is an elongated E-W trending strip of land north of Lordship that includes Frash Pond and part of the Bridgeport Municipal Airport. After "a careful search of the area," Crowley was unable to locate any exposures of serpentinite and concluded that, if present, it lies beneath the drift in this southeastern-most part of the Bridgeport Quadrangle. On his map of the Bridgeport Quadrangle he delineates a wedge of drift that may be underlain in part by serpentinite. The northernmost extent of this wedge is located north of Broad St.

Comment: *"I don't think we ever had a health problem in the Town of Stratford from the Raymark place." "I have not seen any published reports of health problems in the town from this waste."*

Response: In 1993, the Federal Agency for Toxic Substances Disease Registry (ATSDR) conducted an assessment of the health of the town. The report of their assessment was released in 1997 and indicated that there was a slightly elevated cancer risk (bladder cancer) to residents in the town. Although the specific link to the Raymark soil-waste/fill is difficult to quantify, the ATSDR report references it as a potential cause.

EPA is required to conduct a risk analysis for each Superfund Site. The completed studies and reports for the Raymark facility and of the Shore Road Area are available for review at the Stratford Town Library. As additional Remedial Investigations at other Raymark Operable Units are completed, they will also be placed into Stratford's Town Library. Each Remedial Investigation report includes a risk analysis for the area being studied.

Comment: *How can lead and asbestos get out of the ground?*

Response: Lead and asbestos contamination are issues for people who are directly exposed to contaminated materials through ingestion (eating directly or in the food chain), dermal (skin) contact, or inhalation (breathing). Lead must be ingested and asbestos must be inhaled to pose a health threat. Each of these contaminants is present in elevated levels at the Shore Road Study Area. Regular users of the property, specifically pregnant women and children, are susceptible to risks from exposures. Simply using the site in its current state can release these contaminants (for example, as dust) and expose site users. When exposed to rainfall lead can leach out of the

soil and in to the groundwater or adjacent surface waters, adding another potential pathway of exposure.

Comment: *There is so much lead in the ground from past use of house paint and leaded gasoline. The epidemiological report that was done didn't relate the risks from these sources to the risks from Raymark wastes. How can EPA understand if there are major or minor risks from Raymark wastes without looking at these other sources of contamination?*

Response: The original epidemiological report by ATSDR evaluated the health of citizens living in Stratford. It focused on a number of contaminants, lead in particular. While the report identified health risks to individuals living in Stratford from lead, it did not break down its discussion of health risks based on the source of lead.

An EPA report completed for the Raymark Facility (Feasibility Study for OU#1) noted that soils from the Stratford area that had not been affected by Raymark wastes has lead concentrations of approximately 224 mg/kg. By comparison, concentrations of lead at the Shore Road Study Area are as high as 10,000 mg/kg. EPA has evaluated the contamination within the Shore Road Study Area, including lead, and concluded that the ecological and human health risks caused by lead (and other contaminants) in Raymark wastes within the Shore Road Study Area are unacceptably high.

Topic: Costs

Comment: *How is the severity of the problem at Shore Road related to the cost of the proposed cleanup?*

Response: To make this comparison, EPA had to evaluate the risks and the costs of cleanup alternatives. The site sampling identified the vertical and horizontal extent of contamination. Once these were identified, an evaluation of the contamination, including a risk assessment, was performed. From this evaluation, three "hot spots" were identified. "Hot spots" are areas with much higher levels of contamination. In general, the risk of potential harm to public health or the environment is much greater with higher levels of contamination. The cost of the cleanup is directly related to the amount of contamination that needs to be excavated (Alternative #3) or covered (Alternative #4). Contamination located in the groundwater will be addressed under the long-term groundwater cleanup program for either alternative.

Comment: *The figures for some of the cleanups are getting astronomical, sooner or later EPA is going to run out of money, and I hate to see my taxpayer money spent on cleanups that could be done more inexpensively.*

Response: EPA is committed to developing cost effective cleanup alternatives that are protective of human health and the environment. In addition, EPA seeks to recover cleanup costs, whenever reasonable, from parties that are held liable under the Superfund law.

Comment: *This is an expensive cleanup alternative, and EPA will be faced with more millions of dollars in costs to clean up the rest of the Raymark site. Where is the money going to come from?*

Response: To date, the funds have come from a federal account known as the Superfund. The Superfund was established from the proceeds of a tax on chemical and petroleum industries. The Superfund is used for cleaning up abandoned or uncontrolled contaminated sites. EPA attempts to recover cleanup costs from parties held liable under the Superfund law. Recovered costs are returned to the Superfund.

Comment: *"My comment is, did EPA find deep-lined pockets in the Town of Stratford with the Superfund that we could keep pouring this money into?"*

Response: The intent of this comment is unclear. EPA's cleanup alternative was selected because it protects public and environmental health in the long term. To date, the Town of Stratford itself has not contributed funds to the cost of the cleanup. Any construction or implementation work will be put out for competitive bid.

Comment: *EPA did not present the costs of in-town trucking, final in-town disposal, or long-term management of wastes in the EE/CA. Without these costs it is impossible to compare the cost of in-town disposal with EPA's \$105 million estimate for out of town disposal.*

Response: The EE/CA does present the costs of "in-town trucking" in Appendix E of the EE/CA. They are described as "Hauling" under the heading of "Soil Excavation" in the Cost Assumptions for each alternative. The costs themselves are listed as "Hauling excavated material" in the Preliminary Capital Cost tables for each in-town storage alternative.

The commenter is correct that comparing the costs of in-town and out of town disposal is difficult. The long-term final in-town disposal and O&M costs are not included in the EE/CA. These costs, and the exact location of in-town disposal, were not developed at the time of the EE/CA. The incremental increase in capping costs for Shore Road wastes will be minimal if the material is consolidated at a location already containing Raymark wastes which is also in need of capping. In general, capping costs associated with consolidation are significantly less than the cost of out-of-town disposal for those same wastes.

Any capping costs associated with waste consolidation will be part of the cleanup costs for the

area receiving the wastes.

Comment: *The EE/CA's treatment of cost information is very disturbing. According to Appendix E, page 28 of the EE/CA, the only costs for the placement and ultimate disposal "in town" are the 3-year lease of a membrane structure and the costs associated with erecting this building with a stable floor. There are no costs for transporting the wastes across town, loading it in to the building, testing the wastes, monitoring the environmental impacts of the waste transportation and storage, or providing security. Additionally there are no costs identified for constructing the promised "RCRA Cap" which has been only a verbal promise. Without these costs, the EE/CA represents a distorted representation of the facts.*

Response: The EE/CA cost estimate addressed the issues of excavation of wastes (see the Shore Road Study Area EE/CA Appendix E, page 27 of 36, under Soil Excavation) and transporting (hauling) wastes across town (ibid., page 27 of 36 under Soil Excavation). Testing the wastes is unnecessary because they will have been tested before excavation and the contaminants will not change. Security costs were not included because the cost estimate assumed the in-town disposal site would be fenced. Hazardous waste professionals will manage all transportation and storage, including sampling and monitoring as needed (these costs are included in the project contingencies and will vary depending on the alternative selected). The cost of loading materials into the temporary storage building is included in the waste hauling estimate. The \$5,187,179 cost for in-town storage contains considerably more than the membrane structure cost. (Note that the purpose of the EE/CA cost estimate is not to be as detailed as a preliminary design cost estimate). Finally, the costs of the cap are not included in this EE/CA (see response above for discussion on capping).

Comment: *What are the costs for the placement of the Shore Road material at the anticipated "in-town" storage facility?*

Response: The costs for in-town storage of Shore Road wastes are \$5,187,179, as shown in Appendix E, page 29 of 36 in the Draft Final EE/CA.

Comment: *There are discrepancies in the disposal cost estimates in the EE/CA. If you add the cost of in-town disposal to the cost of transport for out-of-town disposal the result is about \$80 million. Why is this different from the estimated \$104 million cost of out-of-town disposal?*

Response: The difference is that the cost estimate for Alternative #3 contains a 20% general contingency and a 1% engineering contingency. Without these contingencies, which account for project uncertainties, the numbers are the same.

Comment: *One commenter was concerned that EPA could run out of money for cleanup "just getting to Shore Road," and would have little or no money to clean up the rest of the Raymark site. Another asked, "Could the capping of the ballfield not get completed because of a lack of funds?"*

Response: At this time, EPA anticipates that sufficient funding will be available to remediate all locations in Stratford that present a risk to human health and the environment. It is difficult, however, to predict all fund expenditures in advance. Each Raymark waste location will be evaluated and funded on its own merits.

Comment: *The cost estimate for Alternative #4 is suspect, since such a landfill has not been engineered or tested before.*

Response: Although a landfill has not been engineered or tested at Shore Road before, caps have been placed in marine environments, either submerged or partially submerged, for many years. The ability to withstand weather in the area would be a major focus of cap design. The long term performance and effectiveness of the design, however, could only be evaluated in time after the remedy was constructed.

Topic: Raymark waste outside of Stratford / Waste co-mingling

Comment: *Can waste from outside of Stratford be deposited in a landfill at the Ballfield? Under what conditions? Does EPA anticipate bringing waste from other towns to this landfill? Does EPA know if Raymark waste can be found outside of Stratford? What will the ultimate boundaries of this Superfund site be? Since Donald Berger of EPA stated that municipal boundaries do not apply to the movement of Raymark Waste, could waste be brought into Stratford from other towns and potentially other states where Raymark Waste is found? The Town of Stratford must have some kind of assurance in writing that the EPA will not approve movement of waste from outside of Stratford to the Ballfield.*

Response: At this time, the Raymark Site consists of locations within the Town of Stratford. EPA does not intend to bring any wastes to the Ballfield from outside the Raymark Site.

Comment: *If Raymark waste is co-mingled with waste from another source is it still acceptable to put it in the Ballfield? If so, does this mean that a very small amount of Raymark waste, mixed with a large amount of waste from somebody else, could be landfilled at the ballfield?*

Response: The fact that Raymark waste may be commingled with waste from another source does not affect EPA's ability to consolidate material at the Ballfield or at any other location. However, space for consolidation at the Ballfield and at all other locations is limited. EPA's

primary concern is the cleanup of Raymark wastes from areas that pose a risk to human health and the environment. It is not EPA's intention to dispose of wastes from other sources at any location within Stratford.

Comment: *Is it true that if you take waste from other sources and mix it with Raymark waste at the Ballfield, that the site could lose its status as a Superfund-financed operation and become simply an open dump?*

Response: No.

Comment: *Although it is not mentioned in the EE/CA, EPA has indicated that the Raybestos Memorial Ballfield is the likely final resting place for the soil removed from the Shore Road area. In various public meetings, EPA has indicated that it will enter the Ballfield through access provided by the Contract Plating Company. EPA contemplates tearing down the buildings and somehow treating the lagoons and other non-Raymark pollutants at Contract Plating. Definitive separation of these two companies' waste will be tremendously difficult physically and impossible legally. This suggests that co-mingling of two companies' distinctly different wastes will occur, compromising Superfund protection of EPA's activities and qualifying the site as a commercial landfill according to Connecticut state law.*

Response: The Raymark Site consists of all locations where Raymark waste from the former Raymark facility has come to be located. Because Raymark waste is present on the Contract Plating property, that property is part of the Raymark Site. EPA's authority to consolidate waste among the two properties will not be jeopardized.

Topic: Comments about the Design or Conduct of the Cleanup

Comment: *Regarding ambient air quality: the last time work was done at the Raymark facility, EPA used "highball" samples to measure particulates over an 8-hour and a 24-hour period. I believe the technology has changed and now EPA has to use equipment that measures down to 10 microns and/or 2.5 microns. Where are these samples going to be taken in Stratford and how quickly will the citizens of Stratford be able to get the results so they can be protected from potential air pollution concerns?*

Response: EPA will use the most up-to-date air monitoring technologies and meet all legal requirements. The location of the sampling stations and frequency of sampling will be determined during the design phase of the cleanup. If members of the public have specific recommendations for air monitoring protocols, they should contact the EPA project manager or the Stratford Health Department directly to discuss them. All air monitoring results are public

information. Copies of those results are given to the Stratford Health department regularly while the cleanup is underway. Results of air monitoring for previous cleanup activities remain available at the Health Department.

Comment: *EPA should inform the residents of Stratford about the risks of any contaminant removal process.*

Response: EPA's experience in Stratford shows that these risks will be very low. There were no significant violations of air standards when EPA moved Raymark wastes during the capping of the Raymark Facility property. Diligent monitoring of ambient air quality and on-site personnel will ensure that all work at the Shore Road Study Area is also done safely.

Comment: *EPA should make sure that contractors that move the Shore Road soil are trained and certified to do this work, and it should monitor compliance with EPA and CTDEP guidelines to minimize impacts on the environment or residents from waste transportation.*

Response: EPA contractor personnel are required by law to be both experienced and certified to perform their assigned tasks. EPA will have an oversight contractor to monitor their work and ensure compliance with EPA and CTDEP standards, laws, and guidelines. As previously noted, EPA will work with Town officials to develop transportation routes.

Comment: *Transportation impacts of sending the Shore Road waste to the Ballfield could be minimized if the trucks use the following route: Shore Road – Stratford Ave. – Alfred Court – Ferry Blvd. – East Main St.. This route would affect less than a dozen residential properties.*

Response: EPA will certainly consider this route. EPA will consult with Town officials to select a final route that minimizes disruption to the citizens and businesses in the area.

Comment: *"EPA should remove the hazardous material by way of the river, unloading at the dock or possibly the railroad right-of-way, and then over to the collection area"*

Response: EPA did not evaluate river transportation during its consideration of cleanup alternatives. Generally, EPA selects transportation modes that require less handling of materials, as costs increase each time waste is handled.

Comment: *EPA should consider "shrink-wrap" covers (such as those that are used for storing boats during the winter) to cover trucks as waste is moved through town.*

Response: Waste removed from the Shore Road Study Area will be wet and covered to prevent any escape of dust.

Comment: *Any cap at the Shore Road Area must be impermeable to tidal rise. This area has flooded at least twice in the last 11 years. Can an impermeable cap withstand this hydraulic pressure?*

Response: EPA agrees that hydraulic pressure may be a problem with an in-place cap at the Shore Road Study Area. To ensure cap integrity, EPA would need to conduct research on groundwater flow (which is part of the Alternative #4 proposal) and would have to construct a properly engineered landfill sub-base and cap.

Comment: *Regarding Alternative #4, an impermeable cap will do nothing to eliminate continued leaching of material into the river by tidal action.*

Response: The placement of an impermeable cap will stop infiltration from the soils above the water table. Any contamination located in groundwater, however, will continue to leach. Any contamination remaining within the groundwater would be addressed as part of the groundwater investigation scheduled to be complete next year.

Comment: *Using EPA estimates of the amount of soil to be moved from the Shore Road area to the temporary storage building, there will be waste across the entire building with an elevation of 13 feet when all the soil is moved. One can envision a series of these pods full of waste placed somewhere in Stratford and the EPA saying it does not have the funding to empty them and treat the soil inside. The movement of soil from Shore Road should not happen.*

Response: EPA is committed to addressing the risks posed by Raymark wastes. If a temporary storage location is selected as a component for the remedy of the Shore Road Area, EPA agrees that it may not be the most efficient approach to cleanup. However, EPA also believes that it is a preferred approach than leaving the waste in place and allowing further exposures to human health and the environment to occur. Although the availability of funds cannot always be predicted, it is EPA's intention to reduce the risks posed by Raymark waste. EPA is committed to addressing the risks posed by the Raymark wastes and seeing a final cleanup come about for

the Site.

Comment: *The commenter believes that the environment and Stratford would be better served if waste stops moving from different parts of town to other parts of town. If EPA deems that treatment of the contemplated commercial sites is required, the treatment should be limited to the site itself, or the waste should be treated, if required, and then moved to the appropriate licensed RCRA facility.*

Response: The location and type of disposal for Raymark wastes will depend on the specific cleanup remedy selected for each individual parcel of property. Consolidation of contaminated materials may be the selected remedy at some locations and not at others. EPA will make every effort to minimize the amount of material to be transported from one location to another.

Topic: Other Comments

Comment: *Can we get outside experts, or a "TAG Committee" of people with competent technical backgrounds, to independently review the alternatives for this plan? Can we get an application for a Technical Assistance Grant? What can the money be used for?*

Response: TAGs (Technical Assistance Grants) are available to community groups. The application process requires a group to form and apply for the funding. The funds can be used to hire a consultant to review EPA's work products and provide an independent assessment. For details on the TAG application process, contact EPA's community relations coordinator for the Raymark site, Jim Murphy, at (617) 918-1028, or email him at: murphy.jim@epa.gov.

Comment: *People working for EPA at the former Morgan Francis property start work at 5:30 AM. We have had to endure the trucks, bells, dust and noise that these people make from dusk to dawn. While the Town of Stratford has told them they can receive tickets for violating noise and other regulations, these warnings have not changed their behavior.*

Response: The work hours at the Morgan Francis property were allowed to be approximately 7 AM to 5 PM. Sometimes trucks started their engines earlier in the winter to warm them up so they would be ready to work at 7 AM. The contractor did receive notification of the Town of Stratford noise ordinances and reportedly adhered to the requirements. The contractor's operating permit included specific conditions that he/she had to meet, and compliance with Town Ordinances was one of those conditions.

For issues such as these it may be possible for EPA to have a local "hotline" so that residents can voice issues and complaints and also to ensure that EPA is made aware of them. EPA will look into installing a local number to address these types of issues.

Comment: *An environmental consultant had strong concerns about compliance with/management of Toxic Substances Control Act regulations and the movement of PCBs in the Town of Stratford. Specifically, he was concerned that the TSCA violations that could occur from moving materials through Stratford would jeopardize the long-term benefits of the proposed solution.*

Response: Any cleanup alternative selected by EPA will comply with the applicable regulations of the Toxic Substances Control Act - namely 40 C.F.R. 761.50(b)(3)(i)(A), 40 C.F.R. 761 (c), 40 C.F.R. 761.75, and 40 C.F.R. 761.79.

Comment: *In the EE/CA, EPA claims that the nearest treatment facility is 1,800 miles away, but presentations by EPA said that the facility was in Ohio or New York state, which are no more than 600 miles away.*

Response: The 1800 miles is a round-trip figure: haulers will be travelling to and from the site for each load. This was a conservative estimate used for developing the preliminary costs in the EE/CA. Potential disposal locations for Shore Road Study Area wastes and their minimum round-trip distances include:

Chemwaste, Model City, NY – 878 miles

Chemwaste, Fort Wayne, IN – 1454 miles

Chemwaste, Calumet City, IL (near Chicago) – 1664 miles

Peoria Disposal, Pottstown, IL (near Peoria) – 1984 miles

Actual distances to transport the waste to any of these sites would be greater due to transportation regulations, which require hazardous waste shipments to follow designated routes.

In discussions several years ago, Chemwaste in Model City, NY, indicated that it could not handle the daily volume of waste that the Shore Road Study Area cleanup would generate. If off-site disposal were to be selected for any Raymark OU, the final selection of a particular facility would depend on its fees, and its ability and willingness to handle the daily volume of waste generated by cleanup activities.

Comment: *Raymark changed their name, filed for bankruptcy, and moved to another state. Companies should not be able to do this and then leave the government and the town liable for the cleanup.*

Response: The U.S. sued Raymark for past and future cleanup costs for the Raymark Site. In August 1998, a Connecticut federal district court ordered that the Raymark facility property be sold and certain proceeds paid to the U.S. Based on current information, EPA expects that sale to take place in late 1999 or early 2000. In addition, the U.S. expects to pursue the insurers of Raymark for additional recovery of response costs.

Comment: *“Would you be willing to live in a neighborhood where workers wearing white protective suits work on one side of a fence and your children are playing on the other side of the fence?”*

Response: EPA will not compromise the health of local residents. The proper safeguards that must be followed by cleanup contractors are recorded in the site health and safety plan. EPA’s oversight contractor at the site will ensure that the cleanup contractors implement the proper safeguards, as delineated in the health and safety plan.

Comment: *Will property around the Ballfield be devalued due to EPA’s work? Why is EPA trying to sell us on what good use the property could be put to after the cleanup when there are no guarantees that any of this will come about?*

Response: The Ballfield is currently an uncontrolled hazardous waste site. When EPA’s cleanup is complete, the Ballfield property will be much safer, properly landscaped, and potentially available for public or private uses (for example, a park or a light industrial setting). This change should improve, rather than reduce, property values. EPA will plan and conduct a cleanup of the ballfield. A Proposed Plan for the cleanup of the Ballfield (known as OU#4) will be released later this year or early 2000. While EPA cannot guarantee what the future use of the property will be, EPA intends to clean up the site to a level that allows future “good use” of the property.

Comment: *The Toxic Substances Control Act requires that PCB waste, as reported on the Shore Road property, must be treated if moved and placed in a landfill. The likely treatment is incineration. According to other laws, asbestos must be buried and not exposed to the air in any way. Lead, at the reported volume, must be treated if transported and then it can be buried. EPA has selected a remedy that does not require any treatment of the waste which contains all*

three pollutants in significant quantities before moving it to another part of Stratford for ultimate, untreated disposal. This is not legal.

Response: EPA's proposed alternative includes pilot scale testing to evaluate potential treatment technologies. However, if an effective treatment technology cannot be found, EPA can designate the area between the Shore Road Study Area and the receiving location an "area of contamination" ("AOC") pursuant to Superfund LDR Guidance #5, Determining When Land Disposal Restrictions (LDRs) Are Applicable to CERCLA Response Actions, OSWER Dir. No. 9347.3-05FS (July 1989). For CERCLA purposes, an AOC is delineated by the areal extent (or boundary) of contiguous contamination. As long as such contamination is continuous – even if it is various in type and concentration - EPA can consolidate waste within the AOC without treatment.

The disposal of Raymark waste will comply with the applicable regulations of the Toxic Substances Control Act - namely 40 C.F.R. 761.50(b)(3)(i)(A), 40 C.F.R. 761 (c), 40 C.F.R. 761.75, and

40 C.F.R. 761.79 - and the Clean Air Act - namely 40 C.F.R. 61.145, 40 C.F.R.61.150, and 40 C.F.R.61.151.

Comment: *According to EPA as it applies to Stratford and Raymark, what is a facility? What is a site? And what is the status of any property which contains "Raymark Waste" as defined by EPA?*

Response: EPA uses the definition of "facility" that is set forth in the Superfund law at 42 U.S.C. § 9601(9) and the National Contingency Plan ("NCP"), 40 C.F.R. 300.5. The term "site" is not defined in the Superfund law or the NCP. In general, EPA considers a Superfund site to include all locations where hazardous substances have come to be located. Therefore, the Raymark Site includes all locations where Raymark facility waste has come to be located.

Comment: *What is the relationship between the former Raymark Ballfield and the original Raymark Site?*

Response: EPA believes that the former Raymark Industries, Inc. used the Ballfield for the disposal of manufacturing waste materials from approximately the early 1940s to 1977.

Comment: *When will the former Raymark Ballfield be capped? Is it possible that if waste*

starts moving to the former Raymark Ballfield that all the excavated waste from the 10 plus other commercial sites being considered for treatment by the EPA could be placed there before the capping process could even start?

Response: It is very likely that the Ballfield will be capped, however, EPA has not yet formally proposed a cleanup option for the area. EPA released the Final RI for the Ballfield in August 1999. The Feasibility Study, which evaluates the potential cleanup options, is in the final stages of development. EPA was planning to release the Feasibility Study in October 1999 along with a proposed approach for remediation with construction activities beginning in mid 2000. It would be possible to have any wastes that may be consolidated at this location placed at the Ballfield before capping began.

Because of several comments received requesting a Master Plan for all of Raymark OUs, the schedule for cleanup is being reconsidered. EPA is evaluating if a more effective approach can be developed to share proposed cleanup plans with the public prior to moving forward with construction activities.

Comment: *If the Shore Road waste doesn't go to the Ballfield, couldn't the capping of the former Raymark Ballfield begin immediately?*

Response: The potential consolidation of wastes from Shore Road or any other area at the Ballfield would be unlikely to affect the schedule for Ballfield remediation. The Final Remedial Investigation for the Ballfield was released in August 1999, and the Feasibility Study, which evaluates the potential cleanup options, is in the final stages of development. After the Feasibility Study and EPA's proposed approach is released, a 30 day public comments ensues. At the close of the public comment period, EPA must prepare a Record of Decision that will document the selected Remedy. After remedy selection is approved and funding is secured, then design and construction of the Ballfield cleanup can begin. As stated in a previous comment, construction was initially scheduled for mid 2000. EPA is considering delaying the schedule in an effort to evaluate whether a more effective approach can be developed to share proposed cleanup plans with the public prior to moving forward with construction activities.

Comment: *What constitutes "placement" in this context of a "Non-Time-Critical Removal?"*

Response: The term "placement" refers to the land disposal of hazardous waste into a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation or underground mine or cave. However, "placement" does not occur if wastes are moved within an "area of contamination" as that term is defined in Superfund LDR Guidance #5,

Determining When Land Disposal Restriction (LDRs) Are Applicable to CERCLA Response Action, OSWER Dir. No. 9347.3-05FS (July 1989).

Comment: *Why was the "in-town" storage site unnamed in the EE/CA?*

Response: The in-town storage site was unnamed in the EE/CA because EPA has not yet confirmed a location. The type of response proposed at the Shore Road Area is a removal action which allows EPA to act more quickly in cases where risks are higher. Because of this, the EE/CA typically focuses on the different types of alternatives available to address a problem and not on every aspect of each alternative. The function of the EE/CA is that of a preliminary planning document.

For the Shore Road EE/CA, the issue of finding an in-town storage location has become a more controversial issue than EPA originally anticipated. EPA is still in the process of determining the best location for any materials that may be excavated.

Comment: *Does current groundwater analysis of the former Raymark Ballfield and Shore Road warrant the construction of a RCRA cap, especially after the soil containing the waste has been exposed to the weather for at least the last 30 years or more?*

Response: EPA has completed risk assessments at both properties. The results of these assessments indicate that there is a risk to human health if certain groups, primarily pregnant women and children, are exposed to Raymark wastes at these properties. Based on this risk, EPA will implement a cleanup at each area. Interim capping measures that were previously taken at each of these properties are no longer effective, and it is time to perform a final remediation.

Comment: *How has the EPA documented a risk to human health other than by direct exposure from waste currently placed at Shore Road or the former Raymark Ballfield?*

Response: EPA has only documented direct exposure risks at these sites. These include dermal contact and ingestion for both present and future users of the property. EPA did compare site soil contaminant concentrations to soil screening concentrations used by EPA to indicate potential indoor air concerns. Soil concentrations did not exceed these screening concentrations. EPA also performed a preliminary screening of site soil contaminant concentrations against groundwater protection criteria and identified soil contaminants that may be a problem in

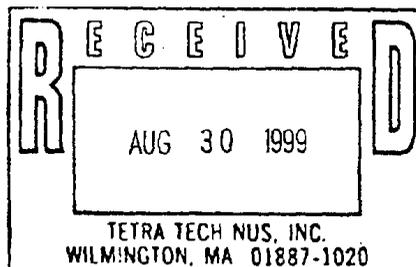
groundwater. These data will be presented and evaluated further when the groundwater investigation is completed.

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PUBLIC COMMENTS

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Public Comments Held before Kevin Lombino, Licensed Shorthand Reporter and Notary Public for the State of Connecticut, at Wooster School Library, Lincoln Street, Stratford, Connecticut on August 5, 1999 at 7:00 p.m.



COPY

1 MR. BERGER: For those of you who haven't
2 signed the sheet, if you want to make a
3 comment, please come up here first of all and
4 put your name and address on the sheet so we
5 can have a record of it.

6 Anybody want to go first.

7 MR. JENNINGS: I also want to make it
8 clear that during this hearing, this is not a
9 question-and-answer session. This is for you
10 to state your concerns on the record. We will
11 formally respond to them in the documents to
12 come.

13 MR. HIDU: Okay, Tim Hidu, Harrison
14 Avenue, H-I-D-U. You got Contract Plating now
15 starting to get, you said, you are going to add
16 dirt into that. Isn't it cheaper to just
17 excavate the little bit that is put on there.
18 And what about the residents' concerns which
19 still have yet to be addressed? You can't
20 separate Shore Road from where you are dumping
21 it because that is walking hand in hand, and
22 what are you going to do with the wildlife now
23 that you have living back there?

24 No answers. You ain't going to answer
25 anything, are you? I didn't think you would.

1 I want to know how come the meeting last night
2 wasn't put as a meeting.

3 MR. ROHALY: Paul Rohaly, R-O-H-A-L-Y,
4 382 Patterson Avenue, my property adjoins the
5 ball field that Raymark, and as resident of
6 Stratford and being closed to a possible site
7 for a future home for additional waste, the
8 thing that bothers me the most is that
9 asbestos, as far as I know, is most dangerous
10 when it becomes airborne.

11 At the current time it's in the ground
12 and I believe it should stay that way. I think
13 our best alternative is to cap in place. The
14 thought of two-to-three-year project bringing
15 850,000 cubic yard or more of waste from other
16 smaller Raymark sites to the ball field behind
17 my house having two small kids scares me.

18 How well anybody, any human being can try
19 to pull this asbestos out of the ground as best
20 as they can and make sure that no fibers get
21 airborne or not over a two or three-year period
22 -- I am an engineer. I really find it hard to
23 believe that it's going to be perfect. Nothing
24 is ever perfect and I just hate to see anything
25 happen to town residents, especially children

1 and including my two.

2 And I think our best alternative is to
3 look at capping all the sites in place. Maybe
4 some things on Shore Road, maybe we don't have
5 all the answers for how to do the perfect cap
6 done on that. You may come up with a
7 brainstorm a week from now what to do with it.
8 I should hope so -- I could always hope so,
9 let's put it that way. But I really think our
10 best alternative for the people of Stratford is
11 not to have the asbestos being trucked through
12 town for two or three years. Keep it where it
13 is, put a cap on it and put it to bed. Thank
14 you very much.

15 MR. KEKACS: Robert Kekacs, K-E-K-A-C-S,
16 414 Connors Lane, Stratford. I have a few
17 comments, some of them would have been
18 questions and I know they are hard to answer.

19 I am confused about the severity of this
20 problem down there. A few years back DEP did
21 put a cap on it and that was supposed to be,
22 you know, I know it wasn't supposed to be the
23 end cap but it was supposed to take care of
24 it. I, like many people in this room here,
25 have lived in the Town of Stratford all my

1 life. I hunted there, walked through there,
2 swam there and I don't have any problems and I
3 can't equate the severity of the problem to the
4 cost of some of these projects that you
5 portrayed up here and already the most
6 inexpensive one isn't really acceptable to the
7 DEP.

8 If you are going to spend our tax payers'
9 money, I think that option would be the one if
10 it was going to be done that I would like to
11 see done. I believe that you tree huggers are
12 going to run out of money. We have other
13 spots, this is this problem here. I think a
14 bigger problem is Ferry Creek which is more
15 active than land on Shore Road and we are going
16 to go through this whole process again. We are
17 going to go through millions and millions of
18 dollars.

19 My comment is, did EPA find deep-lined
20 pockets in the Town of Stratford with the
21 Superfund that we could keep pouring this money
22 into. Some of it has to be taken care of, but
23 at these figures they are getting astronomical
24 and sooner or later we are going to run out of
25 money and I hate to see my tax-payer money

1 spent on things that could be done a different
2 way.

3 I am not an expert on this, but I do
4 believe if it weren't for that \$3-million job,
5 that should suffice. It's capping, it's
6 holding it in place, you can't touch it and
7 it's not a high-traffic area. In the summer
8 season, people go in there for boating and
9 that's about it. But there is not a stream of
10 people walking up and down that road.

11 And like I said, I am concerned about
12 future problems which is going to be Ferry
13 Creek. We are going to be faced with this
14 whole thing going, more millions and millions
15 of dollars. Where is it going to come from?
16 The questions I have I think you answered me
17 outside in the hallway. Thank you.

18 MR. PEREZ: Good evening, my name is
19 Charles Perez. I live on Cottage Place. I
20 have lived there about 30 years.

21 I am concerned for the health and welfare
22 of my family and everyone else's family in
23 here. But, you know, we located these dump
24 waste pods all over the town. What happens if
25 we find some over in Milford that comes from

1 Raymark, can they bring it from Milford over
2 here to Stratford and put it in my backyard?
3 Is that going to be another option or do we
4 find another location?

5 I mean, these are questions that bother
6 me. Are they expecting to take waste from
7 other towns and bring it in to my backyard
8 because I now have a waste depository? These
9 are questions I would like to ask because it
10 does concern me. Some of these questions are
11 constantly glossed over when we ask them. This
12 is a public meeting and that's how I feel, and
13 I would like to know if anyone else feels the
14 same way, perhaps you can come to the next
15 meeting and we might be able to get some
16 answers. Thank you.

17 MR. BERGER: I am not supposed to do
18 this --

19 MR. PEREZ: Then don't.

20 MR. BERGER: I am supposed -- it's a very
21 good point. And I am surprised there haven't
22 been an answer to it already. It's flatly
23 illegal for us to bring non-Raymark waste,
24 that's half the question.

25 MR. PEREZ: Yes, sir.

1 MR. BERGER: Not bring non-Raymark waste,
2 so that's part of the answer. We are not
3 proposing under any circumstances to build a
4 hazardous waste landfill. Now, regardless of
5 what town it's in, the only waste we could ever
6 consolidate -- if we chose to do that and all
7 agreed to it -- would be Raymark waste that is
8 within an area of contamination and that area
9 is defined as the Raymark facility, Contract
10 Plating, Raybestos Memorial Ball Field and
11 Ferry Creek, that's the area. That waste is
12 legal for us to consolidate it. Nothing else
13 can be consolidated with it.

14 MR. PEREZ: I never seen Contract Plating
15 mentioned in any Superfund information that I
16 read anywhere.

17 MR. BERGER: We have found Raymark waste
18 on Contract Plating, and I am not supposed to
19 be doing this --

20 MR. PEREZ: Then don't do it.

21 MR. BERGER: The rules prevent me from
22 answering a question and I am going to do it
23 anyway.

24 MR. PEREZ: Then don't do it then.

25 MR. BERGER: No, I am going to do it

1 anyway because it's important to you folks to
2 know this.

3 MR. PEREZ: It certainly is.

4 MR. BERGER: There is Raymark waste at
5 Contract Plating, we found it there. I was
6 down there yesterday, I saw it there. It's
7 obvious after seeing Raymark waste for the
8 years that I seen it since we started the
9 residential cleanups, I don't need an
10 analytical chemist to tell me what Raymark
11 waste looks like and it's there and we are
12 going to include Contract Plating in the
13 Raymark site cleanup.

14 MR. PEREZ: Okay, now, but how about if
15 they -- so you are saying if they go across the
16 bridge into Devon and they find more associated
17 Raymark waste, that they are not going to pull
18 it over that bridge, Washington Bridge, and
19 drop it behind our --

20 MR. BERGER: No, I didn't say that. If
21 Raymark waste from point A to point B --

22 MR. PEREZ: Excuse me, I am sorry for
23 hogging up this time.

24 MR. BERGER: Forget about the municipal
25 boundary. The only thing we can do is

1 consolidate Raymark waste that migrates from
2 point A to point B, that is the easiest way
3 that I can say it.

4 MR. PEREZ: Okay, but that's in the Town
5 of Stratford?

6 MR. BERGER: Doesn't make any difference
7 what town it is.

8 MR. PEREZ: If it is in Milford or Devon
9 across the bridge and it's Raymark waste, you
10 can bring it legally into --

11 MR. BERGER: Legally we can do that.
12 You may not like that answer, but that is --

13 MR. PEREZ: I don't like it but it is an
14 answer to my question. Thank you.

15 MR. DAVENPORT: Brian Davenport,
16 D-A-V-E-N-P-O-R-T, 50 Shore Road. I have been
17 a resident there since 1944.

18 My primary concern is of one that is very
19 narrow and that is the so-called Shore Road is
20 on my property. And I have heard various
21 indications of different courses of
22 remediation. My primary concern -- and I am
23 not saying that I have a preference over one or
24 the other -- my concern is simply that where
25 the ground level is in front of our stonewall,

1 our retaining wall, when the completion of
2 this, would it be at the same level that it is
3 now because there have been various plans or
4 indications that Shore Road could be raised
5 anywhere from 2-1/2 to 4-1/2 feet along its
6 entire length and since it is my property, I
7 think I ought to have an input on what is done
8 on it and I very much oppose to changing the
9 level of the property or where the road
10 exists. That's my primary comment.

11 I just -- does anybody know, can anybody
12 say, I mean, there is concern about lead, and I
13 recognize its toxic properties, does anybody
14 have any idea what quantity of lead we are
15 talking about with the fill on the boat club
16 property? Is it in ounces, pounds, tons? I
17 just -- I haven't heard anybody say what volume
18 of lead we are dealing with to give people an
19 idea of the magnitude of it.

20 My house is, has been on this property
21 since the 1700s and has been painted with lead
22 paint up until 15 years ago. There are
23 probably several hundreds pounds of lead in the
24 soil around my house. That may be more than
25 all of the lead that is in the fill around the

1 boat club, so I would like to have some idea of
2 what kind of quantities we are talking about.
3 And I just want to throw in one other little
4 aside.

5 Once upon a time I was interested in
6 rocks and mineralogy. In Stratford there is a
7 ledge down near the Birdseye Boat Ramp that is
8 a large outcropping of a mineral called
9 serpentine which is a variant of an asbestos
10 fiber. There is naturally-occurring asbestos
11 fibers in the town in addition to whatever
12 materials were brought in and processed there.
13 I mean, asbestos is throughout the natural
14 ecology of the area so it's not all totally
15 infiltrated, you know, it has been brought in
16 from outside. Thank you.

17 MS. HENDERSON: My name is Lori
18 Henderson. I live in Ansonia but I grew up in
19 Stratford. I am a member of SCAC and have been
20 since day one.

21 I know that you guys are trying to do
22 this in what you say is the cheapest, the best,
23 the most efficient ways. My feeling towards
24 this is I hear from people from one side of
25 town to the other side of town that they don't

1 want their waste moved to their properties.
2 People from Shore Road don't want more stuff
3 there, they want it out of there they want it
4 fixed. The people over by the ball field, they
5 don't want more of it coming over there. And
6 you are talking about just Shore Road.

7 My questions and thoughts have been --
8 and I have been bringing it up and bringing it
9 up, there are a lot of commercial properties
10 here. Has anybody figured out how much waste
11 are on those commercial properties for one?
12 When you decide to clean up Shore Road, you say
13 this has to stay in town or go out. I know
14 since day one nobody accepted this out of town,
15 out of state, whatever, it stayed in town.

16 With that, if you add all the waste from
17 Shore Road, from Contract Plating, from all the
18 other commercial properties, you are going to
19 go to Shore Road, fix that, you are going to go
20 to the ball field and fix that, my question is
21 the commercial properties are going to be fixed
22 after that. Where -- if you can't bring it out
23 of state -- is all this waste going to go from
24 the commercial properties if you cleaned up
25 those other pieces of property, capped them and

1 can't put anything else back there.

2 There has to be -- I know you do this in
3 spurts, Ferry Creek one part, Shore Road, the
4 ball field and different areas, but it has to
5 be all figured out in a complete amount of how
6 much waste there is totally. I know Mr. Daly
7 -- I don't know Mr. Daly but I know Mr. Daly, I
8 am sure, doesn't want all this waste coming
9 back on his property and the people in power
10 say no, we are going to get upset about more of
11 this coming through their neighborhoods. And
12 the people on Province Street, they have been
13 complaining about it I heard and the people on
14 Cottage Street, I have heard what the people
15 have been saying, they are complaining about
16 it.

17 There has to be one conclusion of how
18 much waste there is. Has anybody found out how
19 much waste besides Shore Road and the ball
20 field and the commercial properties, how much
21 waste is there going to be completely and where
22 is it all going to go? And has anybody
23 addressed the fact to have asked the commercial
24 properties owner can we dump there, can we use
25 your property, put it there, cover it over. Is

1 there a -- we give you either a cheaper rate, a
2 cheaper loan or some other means of maybe not
3 evening letting the person have to pay for the
4 cleanup at all.

5 So that I mean, because the way you are
6 doing it, it didn't make sense to me. You are
7 doing one job at a time. By the time you
8 finish you are not going to have any place to
9 put this waste because everything is going to
10 be cleaned up. There is not going to be a darn
11 place to put the stuff. You say we will be
12 taking care of this, of Ferry Creek this one
13 time and we will do it this way. Well, I know
14 how much waste there is around this town, how
15 much you already brought in and out of here
16 just in this school alone and it took
17 truckloads and truckload and truckloads.

18 You know, I see the amount that you put
19 compared to what it costs for Raymark compared
20 to what it costs here. Now one minute you say
21 number one, number two, in three, number four.
22 To me number four is not, it's not feasible at
23 all. Number three, yes, it may be the most
24 expensive of them all but if we go with number
25 four or number one and two, what is the chances

1 that we are going -- I mean, we even lost our
2 seawall down in Lordship. What's not saying we
3 are not going to get real bad floods and we are
4 going to wipe out Shore Road again.

5 But I am telling you, people from the
6 Patterson area, they don't want all this stuff
7 coming to them. It has to be -- people want to
8 know where it's going, where is it all going to
9 fit, how high is it going to be, is it going to
10 affect their homes, is it going to affect their
11 health and somebody make one complete plan
12 because we are -- you guys got to know if you
13 done the testing to find out how much waste and
14 where it is. You got to be able to figure it
15 out how far down if you done the testing for
16 all these places, you have to know how much
17 waste is in each spot, how many cubic feet, how
18 many cubic yards.

19 If you got commercial properties --

20 MR. JENNINGS: Five minutes. You can
21 finish up that thought and you can come up
22 again.

23 MS. HENDERSON: What my concern is is
24 that I think it should be addressed in one load
25 and get it going to one place. If Mr. Daly

1 can't do anything with his property, then it
2 should be all filled in the ball field. I know
3 people on Patterson Avenue don't want to hear
4 that and I know they are not concerned about
5 that, but where else in town is it going to
6 go? There is not many more places left except
7 the commercial properties that have the place
8 to put it. Thank you for your time.

9 MR. WARD: Edward Ward. 542 Freeman
10 Avenue, Stratford. My question has to do with
11 the ambient air pollution sample. The last
12 time the work was done to the Raymark facility
13 you used highball samples to measure
14 particulates over an 8-hour, 24-hour period.

15 I believe the EPA has changed that
16 technology and now the specification is you
17 have to use particle sized equipment that goes
18 down to 10 microns and/or 2.5 microns. If that
19 is the case, where are these samples going to
20 be located in Stratford and how quickly with
21 the citizens of Stratford be able to get the
22 results of the potential air pollution
23 concerns. I think that is it.

24 MR. MURPHEY: Mr. Ward was the last
25 person to sign up. Is there anybody else who

1 wants to --

2 MR. GUNTHER: I would like to make a
3 comment. I am George L. Gunther, 890 Judson
4 Place, Stratford. I think you are going to
5 have a lot more questions than you are going to
6 have answers here. I don't think this group
7 really knows how to take and react in this type
8 of a media you set them up in, this public
9 hearing.

10 First of all, let me say I bet you \$10
11 there isn't four or five people that read that
12 damn thing. I just read it and I asked for it
13 back in July, you got it out in a very short
14 time. I imagine they had a ditto machine up
15 there and you take most of this stuff,
16 extrapolate it and put it into this. But for
17 me to sit down here tonight and just give you
18 a public statement on this particular study,
19 this is a study to cap and to bulkhead the
20 waste, leave it in place.

21 Again, this is my fourth meeting. If I
22 have to give you a reaction, I will tell you 99
23 percent of the people in this town says do
24 that, leave it alone, cap it, leave it there,
25 we don't want it trucked through town. I think

1 you had some reactions on that but even in this
2 I have great questions on this particular
3 report and I would like to see my critique, sit
4 down and take a good look at this and say, this
5 hasn't been feasible from the day you walked in
6 here.

7 You had three alternatives and you said
8 the only one that was acceptable was the third
9 one. And we ask about this, you said a fourth
10 time, I think it's not feasible. You are the
11 ones that remarked. I said, why wasn't it,
12 because of state and federal regulations. I
13 would like to say I danced last night in the
14 street because I was called by Mr. Ron here
15 and told that I was right and he was wrong,
16 there is no state and federal regulations that
17 precluded that they could not have this.

18 Now, we have this plan that I got this
19 morning, but I had a chance to run through it,
20 critique it totally -- not the way I would like
21 to do it with other people other than I. I am
22 not an engineer, I don't even profess to be
23 one, but if you want to put it four feet above
24 the flood level, you want to take the cap and
25 put the cap with all these sequential things in

1 it, are they necessary?

2 Going down there is a good example. I
3 said there is a lot of questions I would have
4 on that, cost. I like the cost of it, it's
5 \$1,200,000 less than your best program and that
6 is not counting the 25-year observation of the
7 million two which will bring it up to even
8 money, what is your proposing and leave it in
9 place and that's what the people in this town I
10 think want. To a large degree, I get concerned
11 with -- the young gal who just spoke here
12 before, the other debris that you have in
13 town. Send me some maps here. I see that's
14 your commercial property. How much of that is
15 contaminated? How much more are we going to
16 put on Raybestos? Are we going to put it up
17 above the Contract Plating?

18 No, we are going to have a park there.
19 It's a nice rendering. It's a beautiful park,
20 but you mean to tell me we have an evaluation
21 of just that commercial property that could be
22 contaminated with Raymark? I don't think so.
23 I think this is what we have in that area. I
24 notice in this we have a phase two. You talk
25 about, first of all, is the Housatonic Boat

1 Club. The next thing was the commercial
2 property. The next thing is the Delbunio, but
3 -- don't ask me to spell that one, you are in
4 deep do-do.

5 But there are three majors that are
6 figured to be dumped over there and we are
7 talking about a three to five-year program. We
8 are talking about having a program or within
9 five months the Housatonic Boat Club would be
10 over there. We have got to wait for
11 commercial. We may do it. We may not do it.
12 We may do it. We don't know. You haven't got
13 that report yet, but it's going to have to stay
14 without a permanent cap on it.

15 Then we got to go over in the other area,
16 dig that out, we are talking three to five
17 years. I hope -- we are opening up another
18 commercial dump and that's what it's going to
19 be because I love the remark tonight, if
20 Raymark waste is commingled with any other
21 waste, then it's acceptable in that particular
22 fill. That means almost anything that you can
23 drip in a bushel basket full of crap on
24 somebody's solid waste plant, and they have to
25 take and accept that according to that if it's

1 commingled. I have some reservations on that.

2 I know the other night the question was
3 asked about the liability in the Housatonic
4 Boat Club and that was a revelation to some of
5 these people that they could have a liability.
6 I know that the village came down here and
7 said, it's okay, all the residential
8 properties, we are going to hold you harmless.
9 You wouldn't have to take and worry about
10 that. But commercial properties, you could get
11 hit with part of the cleanup on it.

12 The Housatonic Boat Club out there and
13 how many other of those commercial properties
14 are going to be held up on this type of thing.
15 And I know the Superfund, I heard this just in
16 the past few days, if you take and put other
17 waste into that that you are talking about, the
18 old Raybestos Field -- that is the birth place
19 of female softball -- anyway, to take and if
20 you are going to dump in on there, then you
21 lose your status as a Superfund financed type
22 of operation. Is this true?

23 And I know you are not supposed to answer
24 questions. If you take and commingle other
25 waste other than Raymark on that particular

1 site, are you disqualified from Superfund. If
2 that's the case, then we have an open dump and
3 how much liability then will go to the
4 commercial properties they will then share with
5 you if that becomes a fact. I think there are
6 many, many questions still not answered here.
7 And I think, again the suspicion that everybody
8 in this town has that you are walking in -- I
9 love Elsie for saying, it's not written in
10 stone.

11 All I can tell you, I go upstate and I
12 talk to people in the department and they tell
13 me that what the EPA wants, the EPA gets. And
14 I know we are a little DEP and you say we are a
15 pretty strong guy. I don't have that
16 confidence that we are. I have an awful lot of
17 concern. I think everybody in this town does.
18 I think the bottom line is, I don't see that
19 this plan can be the limit except maybe there
20 are other plans with other experts. You got a
21 whole cadre of people up there, engineers who
22 can sit down and wrap this out in a week or
23 two. We don't have that advantage.

24 I would like to have people who are in
25 that position to take a look at this, critique

1 it, and if you say it isn't feasible from your
2 viewpoint, maybe it's feasible, if we have some
3 expert take a look at it with an alternative
4 even for this plan here, that's why I think we
5 should have a TAG. I think we should have a
6 TAG committee. It should be composed of people
7 not only the people in the residents there and
8 people that are just in that area but some
9 competent people with some background that
10 might join with them.

11 And we come up with a TAG and I would
12 like to see you get an application form for
13 that plus a technical advisory grant that would
14 give the people in this town an opportunity
15 that they can get this, take a look at this
16 fourth alternative that has never been
17 acceptable from day one, it was never done, it
18 wasn't accepted. Second meeting it wasn't done
19 and we have it now at the third meeting here
20 and it's acceptable -- it's not acceptable yet
21 and I say at some point we ought to be able to
22 sit down and know absolutely why it isn't,
23 bottom line.

24 And I have a tendency to rattle on, I
25 have so much I would like to say. I don't

1 think we ever had a health problem in the town
2 of Stratford from the Raymark place. And I
3 think there is a hell of a lot of other people
4 -- I think the report that was done by the
5 federal government indicates that we had no
6 risk and I don't know if we have a risk now.
7 And is there materials out there? I don't know
8 that lead and asbestos can sneak out of that
9 ground.

10 And the remark was made about the lead
11 from the houses and that, hell, we have had
12 trillions of tons of lead from gasoline that's
13 accumulated in the whole damn area. There is
14 so much here that when you tell me these
15 possible outcroppings and that type of thing
16 could have been a major risk or even a minor
17 risk in this town, I don't think there is a lot
18 of people that will believe you because the
19 epidemiological report that was done certainly
20 didn't take and define it or say that we had
21 that problem and I don't think we have it now.

22 I don't think that this meeting has done
23 a lot to resolve people's fears. I think there
24 has to be more dialogue, more give and take. I
25 want to see some reaction to this thing and I

1 do think the fourth alternative is, in my book,
2 properly done is what we ought to be doing in
3 this town. We can save money. If we can do it
4 properly, the town will benefit because the
5 economic benefits that will accrue to the town
6 if done properly, is another thing, we are in
7 an economic slump in this town. And I think
8 Love Canal, Raymark hasn't done us a damn bit
9 of good. It certainly depreciated the property
10 values in this town, given our commercial
11 property people adgada, lost their property.

12 It's a very broad base for us and I think
13 it's time we take and sat down and got all the
14 answers, not just on your side.

15 MR. BERGER: When we get through with
16 these public comments, questions, whatever, I
17 will stay here as long as you want and try and
18 answer as many of these questions..

19 MS. BOISSEVAIN: My name is Andrea
20 Boissevain. I am an environmental consultant
21 with Health Risk Consultants and I was asked by
22 the director of health from the Town of
23 Stratford to come and attend this meeting.

24 And I would like to comment that I
25 appreciate EPA and their responsiveness of

1 actually coming up with the fourth option, and
2 I would like to echo Doc Gunther's comment
3 about not having enough time. And I would
4 respectfully submit the request to extend the
5 comment period anywhere from 15 to 30 days.

6 I know that in assisting Elaine O'Keeffe,
7 and she is on vacation, I do not believe has
8 not had a chance to review and we would like to
9 have additional time. Thank you.

10 MR. KOPLEY: Hi. My name is Chris
11 Kopley. I also an environmental consultant. I
12 have a relationship the Dock Shopping Center.
13 We have very strong concerns about the
14 management of the TSCA regulations and the
15 movement of PCBs in the Town of Stratford. We
16 are concerned that the TSCA violations that
17 could occur by movement of those material will
18 jeopardize the long-term benefits of the
19 solution. The next statement is if the ball
20 field were not available, what site in town
21 would the EPA choose to dump this material at.

22 Dollar values, in the EE/CA you claim
23 that the treatment facility is 1,800 miles
24 away. We were told that it's in Ohio or New
25 York State, that's no more than 600 miles.

1 That's a big problem, it's a problem. No costs
2 are provided in those numbers that were shown
3 on the board. No costs were provided for
4 in-town trucking nor are costs provided for the
5 management of that waste. So to compare 104 to
6 5 million is completely inaccurate. The
7 numbers do not make sense.

8 For in-town disposal we are talking about
9 roughly \$5 million, and the cost to transport
10 the material is roughly \$74 million. If you
11 add up the two, you end up with \$80 million not
12 \$104 million. That's more a question for the
13 EPA than it is for the big crowd. You have to
14 really read the EE/CA to understand.

15 I am concerned about Contract Plating.
16 If Contract Plating it demolished, its wastes
17 to -- which is the plan as far as we
18 understand, Contract Plating will be
19 demolished its wastes will be commingled with
20 EPA wastes and there will be without a doubt
21 two companys' wastes in one spot. That, in my
22 opinion, may jeopardize the national
23 contingency plan and your authority to
24 consolidate a single company's waste.
25 Therefore, what you are really creating is a

1 commercial landfill which needs to be regulated
2 by the state's siting council as well as the
3 EPA or solely by the state's siting council.

4 There is no groundwater chemistry
5 available for the ball field site. That is a
6 very large concern for me. Without that
7 information we can't determine if a cap is even
8 necessary. We have had 40 years of rain water
9 falling through this waste. I have no evidence
10 to show that the groundwater pathway has or has
11 not been impacted.

12 We are very concerned about the liability
13 issue and that is something that is a
14 residential or a resident concern with the Town
15 of Stratford. We heard it earlier tonight,
16 could we bring material from out of town, the
17 answer was yes, we can bring material from out
18 of town. That leaves open a completely open
19 book which I am very concerned about. That
20 means any of the surrounding towns that have
21 PCBs, lead or asbestos together can be brought
22 into Stratford.

23 And the next large question is, are there
24 any Raymark wastes identified outside of the
25 town that we know of at this time and where

1 does the site stop, what are the boundaries of
2 the Superfund site. That is a serious question
3 because, again, it relates back to what gets
4 deposited in the ball field site. And that's
5 all I have. Thanks.

6 MS. HENDERSON: I am Lori Henderson. I
7 want to address one other thing that Doc
8 Gunther brought up. You had suggested
9 something about a TAG grant. SCAC had gone to
10 the state for assistance with our group. We
11 are trying to get information to the town
12 residents. From what we were told, we had to
13 have Social Security numbers, had to be in
14 somebody's name and it only had to go for
15 certain things.

16 We needed it mainly for, like I said, for
17 printing up our newsletters that we were doing
18 and sending around the town, the information
19 that we send out to the resident and we were
20 turned down for that TAG grant. I know as far
21 as the rest of this waste also, we have run
22 into problems which happened between weather,
23 cost, funding, losing funding from the
24 government which happened when we were working
25 on the Raymark property.

1 Yes, these homeowners and these
2 commercial property owners are putting their
3 money into it but the problem is we can run out
4 of money just getting to Shore Road. We may
5 not have enough money. They may wipe it out.
6 Look what they are doing to Social Security and
7 Medicare, to the senior citizens.

8 It's more important, I think, for the
9 government to express their concerns for the
10 elderly than they think their cleaning up
11 Superfund waste considering this was supposed
12 to be the number one Superfund, quote, site for
13 the nation to prove that we could do this with
14 a certain amount of costs and a certain amount
15 of time.

16 And we did it for a purpose, to put a
17 shopping mall there that now because Raymark,
18 Raybestos, whatever name they want to go by, is
19 now changing their name, filed bankruptcy
20 which, ladies and gentlemen, is legal to do.
21 Change your name, file for bankruptcy, dump
22 here, change your name, move to another state
23 and do it all over again. And that is
24 certainly what Raymark is doing now, they are
25 doing it in another state.

1 Something has to be addressed about that
2 also. Companies should not be able to get rid
3 of this waste just say, hey, well, I dumped
4 here and it's not my property anymore and I
5 filed for bankruptcy and the heck with this
6 state, the heck with this town, I am not paying
7 my taxes, I don't care what you do with this
8 property. Something has to be done legally.

9 You guys, something to do with the
10 government, it has to change. People should
11 not be able to do this over and over and over
12 again and get away with it. That's like saying
13 commit murder, it's okay and a year or two
14 later you can get let out and you can go and do
15 it all over again. I am sorry, it's wrong what
16 is happening here and I don't think you guys
17 are working on a long-term plan.

18 Maybe you are in bits and pieces but it
19 has to be brought together. It really does
20 because, like you are saying, it's going from
21 one spot -- to another part of town is mad at
22 the other side of town. People that don't live
23 on or near Shore Road don't want the stuff
24 there, they want it brought over to Patterson
25 Avenue to the ball field. The people over

1 there don't want it over there, they lived with
2 that for how many years, 24 hours a day, 7 days
3 a week and they were not given a limited amount
4 of hours even though they said they were going
5 to, they didn't.

6 And we don't know, especially by the
7 amount of time with the weather in New England,
8 ground can freeze up, that stops, Superfund
9 money runs out, it stops, you guys get
10 cutbacks, it stops. When is it going to end?
11 How long is it going to take for this entire
12 cleanup, not just one piece at a time but all
13 together? Has anybody put a plan together to
14 hear how much waste, how much time and how much
15 money totally this is going to take? That's
16 all I have to say. Thank you.

17 MR. HIDU: Tim Hidu, H-I-D-U. I only get
18 a few little concerns because you people like
19 to push things down everybody's throats, and I
20 don't understand why you people alone don't
21 just stop, pull your heels and figure out
22 exactly what you are going to do before you
23 start jamming stuff down our throats again.

24 And, if you do decide you are going to
25 truck it all over the town -- which you

1 probably do whatever you want anyway, you
2 always do -- but, anyway, is it just going to
3 be like the water problem we had? We don't
4 hear about it until well after. We all know
5 you had problems with Raybestos and nobody
6 heard about it and you all will sit there and
7 deny you ever did, but it was all done at
8 night and everything else. It was not a very
9 well-coordinated plan of action, if you want to
10 call it that.

11 You all walk away to your little Boston
12 or whatever, you leave us alone until you
13 want to harass us again. It is about time,
14 it's got to stop, the management got to stop
15 you guys that cause it. That's all.

16 MR. BERGER: Any other comments?

17 THE SPEAKER: (Unidentified) Do you have
18 to have an organization set up under, let's
19 say, nonproperty, nonstock in order to qualify
20 for a TAG? Let's say they couldn't qualify
21 because they didn't have --

22 MR. BERGER: If it's okay with you, we
23 will finish this, with the official part of it
24 and then I will tell you the real story.

25 THE SPEAKER: (Unidentified) All right.

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MR. JENNINGS: That's the end of
comments.

(7:44 p.m.)

C E R T I F I C A T E

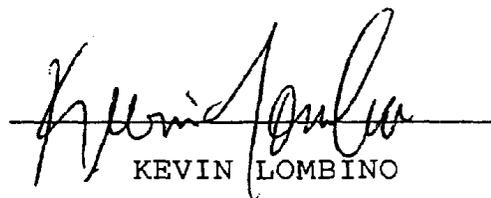
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I, KEVIN LOMBINO, a Shorthand Reporter and Notary Public within and for the State of Connecticut, do hereby certify:

That I reported the proceeding in the within-entitled matter, and that the within transcript is a true record of said proceedings.

I further certify that I am not related to any of the parties to this action by blood or marriage and that I am in no way interested in the outcome of this matter.

In witness, whereof, I have hereunto set my hand this 20 day of August, 1999.



KEVIN LOMBINO

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

Attachment 7- Administrative Record Index

Raymark Industries Inc.

NPL Site

Administrative Record
for the Non-Time Critical Removal Action

Index

Compiled: September 23, 1999

Prepared by
EPA New England
Office of Site Remediation & Restoration

With Assistance from
ads
2070 Chain Bridge Road
Vienna, VA 22182

INTRODUCTION

This is the Index to the Administrative Record compiled in connection with the non-time critical response action at the Shore Road Operable Unit of the Raymark Industries Superfund Site. Section I of the Index includes citations for site-specific documents used by Environmental Protection Agency (EPA) staff in selecting the response action, and Section II includes references to EPA guidance documents. The documents in the Administrative Record are arranged in file break order, then in order by document date.

The Administrative Record is available for public review at the EPA Region I Superfund Records Center, One Congress Street, Suite 1100, Boston, MA, 02114 [(617) 918-1440], and the Stratford Public Library, Reference Department, 2203 Main Street, Stratford, CT. The guidance documents are available only at the Superfund Records Center. The staff of the Superfund Records Center recommends that you set up an appointment prior to your visit.

Questions concerning the Administrative Record should be addressed to the EPA project manager for the Raymark Industries Superfund Site.

An Administrative Record is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

Section I

RAYMARK INDUSTRIES INC
SHORE ROAD
ADMINISTRATIVE RECORD FILE
NTCRA 9/23/99

I. SITE SPECIFIC DOCUMENTS

2.REMOVAL RESPONSE

1. REPORT: HOUSATONIC BOAT CLUB & SHORE ROAD.
TO: RONALD JENNINGS, US EPA REGION 1
AUTHOR: RONALD CURRAN, CT DEPT OF ENVIRONMENTAL PROTECTION
12/28/1998 DOC ID 3611 36 PAGES
2. REPORT: SAMPLING AND ANALYSIS PLAN NON TIME CRITICAL REMOVAL SUPPORT
ENGINEERING EVALUATION/COST ANALYSIS.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
02/01/1999 DOC ID 3626 117 PAGES
3. LETTER: TRANSMITTAL OF PROPOSED BORING LOCATION MAP.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
02/12/1999 DOC ID 3606 12 PAGES
4. LETTER: TRANSMITTAL OF PROPOSED MAP, SAMPLE DATA AND PRESS RELEASE.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
02/12/1999 DOC ID 3607 7 PAGES
- LETTER: TRANSMITTAL OF TECHNICAL SPECIFICATION FOR DIOXIN.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
02/24/1999 DOC ID 3608 97 PAGES
6. LETTER: TRANSMITTAL OF SCHEDULE FOR THE RAYMARK - SHORE ROAD NTCRA
SUPPORT.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
03/02/1999 DOC ID 3605 3 PAGES
7. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHQ53.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
03/26/1999 DOC ID 3612 11 PAGES
8. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHS47.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
03/30/1999 DOC ID 3618 21 PAGES
9. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHS90.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
03/31/1999 DOC ID 3619 21 PAGES

RAYMARK INDUSTRIES INC
SHORE ROAD
ADMINISTRATIVE RECORD FILE
NTCRA 9/23/99

2. REMOVAL RESPONSE (cont)

10. LETTER: DATA VALIDATION, CASE NO. 0071H, SDGS DAHQ62 AND DAHT31.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/02/1999 DOC ID 3613 9 PAGES
11. LETTER: DATA VALIDATION, CASE NO. 0072H, SDG DAHQ55.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/05/1999 DOC ID 3614 41 PAGES
12. LETTER: TRANSMITTAL OF HOUSATONIC RIVER SEDIMENT RESULTS AND PROPOSED
SAMPLE LOCATIONS, RAYMARK - SHORE ROAD, ENGINEERING
EVALUATION/COST ANALYSIS.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/06/1999 DOC ID 3604 20 PAGES
13. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHR09.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/07/1999 DOC ID 3620 20 PAGES
14. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHR51.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/07/1999 DOC ID 3617 17 PAGES
15. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHR84.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/07/1999 DOC ID 3615 18 PAGES
16. LETTER: DATA VALIDATION, CASE NO. 0070H, SDG DAHS25.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/07/1999 DOC ID 3616 17 PAGES
17. LETTER: DATA VALIDATION, CASE NO. 0071H, SDG DAHT31.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/09/1999 DOC ID 3623 6 PAGES
18. LETTER: DATA VALIDATION, CASE NO. 0071H, SDGS DAHQ62 AND DAHT31.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
04/22/1999 DOC ID 3621 1 PAGE
19. LETTER: DATA VALIDATION, CASE NO. 0071H, SDG DAHQ62.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
05/05/1999 DOC ID 3622 18 PAGES

RAYMARK INDUSTRIES INC
SHORE ROAD
ADMINISTRATIVE RECORD FILE
NTCRA 9/23/99

2. REMOVAL RESPONSE (cont)

20. REPORT: DRAFT FINAL ENGINEERING EVALUATION/COST ANALYSIS.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
06/28/1999 DOC ID 3624 306 PAGES
21. REPORT: DRAFT ADDENDUM ENGINEERING EVALUATION/COST ANALYSIS.
TO: US EPA REGION 1
AUTHOR: TETRA TECH NUS INC
07/01/1999 DOC ID 3625 33 PAGES
22. REPORT: ACTION MEMORANDUM.
AUTHOR: US ENVIRONMENTAL PROTECTION AGENCY
09/23/1999 DOC ID 3727
23. REPORT: RESPONSIVENESS SUMMARY.
AUTHOR: US ENVIRONMENTAL PROTECTION AGENCY
09/23/1999 DOC ID 3728
24. REPORT: PREVIOUS SHORE ROAD SAMPLING RESULTS.
DOC ID 3610 3 PAGES
25. REPORT: SUMMARY OF SAMPLING RESULTS SHORE ROAD.
DOC ID 3609 5 PAGES

3. REMEDIAL INVESTIGATION (RI)

1. REPORT: PUBLIC HEALTH ADVISORY FOR RAYMARK INDUSTRIES/STRATFORD ASBESTOS SITES.
AUTHOR: US PUBLIC HEALTH SERVICE/ATSDR
05/26/1993 DOC ID 3601 14 PAGES

13. COMMUNITY RELATIONS

1. FACT SHEET: RAYMARK BULLETIN #22: ENGINEERING EVALUATION/COST ANALYSIS, SHORE ROAD STUDY AREA.
AUTHOR: US EPA REGION 1
07/14/1999 DOC ID 3603 4 PAGES
2. PUBLIC MEETING RECORD: INVITATION TO THE PUBLIC TO COMMENT ON THE ENGINEERING EVALUATION/COST ANALYSIS FOR SHORE ROAD.
AUTHOR: US PUBLIC HEALTH SERVICE/ATSDR
07/14/1999 DOC ID 3602 1 PAGE

Section II

GUIDANCE DOCUMENTS

1. **Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER # 9200.4-26. April 13, 1998. [C504]**
2. **Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER # 9355.4-12. July 14, 1994. [C509]**

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

**Attachment 8
Previous Removal Action Memoranda**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Contains Enforcement-Sensitive Material

DATE: SEP 12 1994

SUBJ: Ceiling Increase and Amendment to the Scope of the Response Request for the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut. ACTION MEMORANDUM ADDENDUM #4

FROM: David McIntyre, Chief *David McIntyre*
Raymark Project Team

TO: John P. DeVillars, Regional Administrator
New England Region

CERCLIS ID#: CTD983903717

SITE ID#: R4

. Purpose

The purpose of this memorandum is to request a ceiling increase for Removal Action at the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut¹. Approval and authorization are hereby requested for a \$13,748,016 increase in the extramural ceiling (which is for the ERCS/USACE ceiling and is a regional allowance cost). This increase raises the total Site ceiling from \$36,511,200 to \$50,259,216. This ceiling increase is necessary to continue response activities documented in the previous Action Memo Addenda. This document contains no change in scope from the previous Action Memo Addendum.

By November 1994, EPA will complete a final Removal Site Action Plan in which the final scope of the project will be delineated and the final cost estimate will be calculated. At present, the following response activities are ongoing:

1) Continue removal actions of up to 47 additional residential properties in Stratford, CT. The soil will be transported to the Raymark facility in Stratford for storage. Complete removal activities at the satellite sites located at 3rd and 4th Ave. site and Elm Street;

2) Conduct operations in the Raymark facility parking lot to receive bulk soil contaminated with Raymark waste. The soil will

¹Copies of the original Action Memorandum dated June 12, 1993, and Addenda dated September 10, 1993, March 15, 1994, and July 25, 1994 are available in the Administrative Record and at EPA Environmental Services Division Lexington Office.



be deposited in piles 15 feet high and covered or placed in on-site lagoons and covered with clean fill. The piles will be built under a moveable dome structure to enclose the work area. As a soil pile is constructed, the dome will be moved across the parking lot to accommodate more soil;

3) Continue site investigation activities of additional properties;

4) Complete the residential indoor dust sampling of homes where Raymark waste was removed or will be removed from the yards. Those homes found to contain Raymark waste above the indoor action levels documented below will be cleaned; and

5) Evaluate and respond if necessary to municipal and commercial properties which contain Raymark waste.

On January 18, 1994, the Raymark Industries Inc., Sites were proposed to be listed on the National Priority List. This is not a nationally significant removal action.

I. Site Conditions and Background

See previous Action Memo Addendum, signed July 25, 1994.

II. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities

See previous Action Memo Addendum, signed July 25, 1994.

IV. Endangerment Determination

Actual or threatened releases of hazardous substances, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare, or the environment.

. Exemption From Statutory Limits

Please refer to the June 12, 1993, Action Memo Addendum in which statutory limits were waived.

I. Proposed Actions

See previous Action Memo Addendum, signed July 25, 1994.

Stratford, CT Project Ceiling Increase Proposal

9/9/94

RAYMARK INDUSTRIES, INC. (STRATFORD) SITES:

	Authorized Ceiling	Cost to Date	Balance	Proposed Ceiling
ERCS	\$7,325,000	\$5,681,590	\$1,643,410	\$7,325,000
USACE	\$10,844,000	\$2,300,000	\$8,544,000	\$20,844,000
USCG	\$115,742	\$82,918	\$32,824	\$115,742
CONTINGENCY	\$1,000,000	\$0	\$1,000,000	\$3,677,016
TAT	\$2,950,000	\$2,451,457	\$498,543	\$2,950,000
ARCS	\$1,367,378	\$891,145	\$476,233	\$1,367,378
REAC	\$508,080	\$351,588	\$156,492	\$508,080
CLP	\$2,980,000	\$1,638,082	\$1,341,918	\$2,980,000
ESAT	\$550,000	\$449,697	\$100,303	\$550,000
CONTINGENCY	\$600,000	\$0	\$600,000	\$1,671,000
Total Extramural	\$28,240,200	\$13,846,477	\$14,393,723	\$41,988,216
EPA	\$4,430,000	\$3,074,538	\$1,355,462	\$4,430,000
CONTINGENCY	\$380,000	\$0	\$380,000	\$380,000
Total Intramural	\$4,810,000	\$2,757,659	\$2,052,341	\$4,810,000
TOTALS	\$33,050,200	\$16,604,136	\$16,446,064	\$46,798,216

RAYBESTOS BALLFIELD:

	Authorized Ceiling	Cost to Date	Balance	
ERCS	\$1,070,000	\$915,123	\$154,877	N/A
USACE	\$25,000	\$12,369	\$12,631	N/A
TAT	\$116,865	\$116,865	\$0	N/A
CLP	\$5,855	\$5,855	\$0	N/A
ESAT	\$15,765	\$15,765	\$0	N/A
EPA	\$266,515	\$234,223	\$32,292	N/A
TOTALS	\$1,500,000	\$1,300,200	\$199,800	

RAYMARK (PRP Lead):

	Authorized Ceiling	Cost to Date	Balance	
ERCS	\$1,400,000	\$0	\$1,400,000	N/A
USACE	\$50,000	\$31,861	\$18,139	N/A
EPA	\$406,000	\$87,916	\$318,084	N/A
CLP	\$50,000	\$24,653	\$25,347	N/A
TAT	\$55,000	\$54,807	\$193	N/A
TOTALS	\$1,961,000	\$199,237	\$1,761,763	

TOTAL PROJECT CEILING:

	Authorized Ceiling	Cost to Date	Balance	Proposed Ceiling
STRATFORD	\$33,050,200	\$16,604,136	\$16,446,064	\$46,798,216
RAYBESTOS	\$1,500,000	\$1,300,200	\$199,800	Unchanged
RAYMARK	\$1,961,000	\$199,237	\$1,761,763	Unchanged
TOTAL	\$36,511,200	\$18,103,573	\$18,407,627	\$50,259,216

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in continuing risk to the public health through prolonged exposure to PCBs, Pb, and asbestos in residential yard soil.

II. OUTSTANDING POLICY ISSUES

N/A

III. ENFORCEMENT

Please refer to the September 30, 1993 Action Memo Addendum, Appendix B.

X. RECOMMENDATION

This decision represents the selected removal action for the Raymark Industries Inc., Sites developed in accordance with CERCLA as amended, and is consistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on documents that will be included in the Administrative Record for the Site.

Conditions at the Raymark Industries Inc., Sites meet the NCP Section 300.415 (b)(2) criteria for a removal. The applicable NCP Section 300.415 criteria for a removal action is:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." [300.415 (b) (2) (i)]

I recommend your approval of the proposed ceiling increase and change in the scope of the response request for the Raymark Industries Inc., Sites ACTION MEMORANDUM. A ceiling increase of \$13,748,016 for extramural costs is requested. If approved the new Site ceiling would be \$50,259,216. You may indicate your approval or disapproval by signing below.

REGIONAL ADMINISTRATOR

Approve: _____ Date: _____

Disapprove: _____ Date: _____



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I
ENVIRONMENTAL SERVICES DIVISION
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Enforcement Sensitive Material Attached

DATE: July 25, 1994

SUBJ: Ceiling Increase and Amendment to the Scope of the Response Request for the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut. ACTION MEMORANDUM ADDENDUM #3

FROM: David McIntyre, Chief *D. McIntyre*
Raymark Project Team

TO: John P. DeVillars, Regional Administrator
New England Region

CERCLIS ID#: CTD983903717

SITE ID#: R4

I. Purpose

The purpose of this memorandum is to request a ceiling increase, document the updated proposed response action plans, and amend the Applicable or Relevant and Appropriate Requirements (ARARs) section in the ACTION MEMORANDUM: Request for Removal Action at the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut¹. Approval and authorization are hereby requested for a \$10,452,000 increase in the extramural ceiling (of which \$7,344,000 is for the ERCS/USACE ceiling and is a regional allowance cost) and a \$1,910,000 increase in the intramural ceiling. This total increase of \$12,362,000 raises the total Site ceiling from \$24,149,200, to \$36,511,200. This ceiling increase is necessary to continue the response activities documented below.

By November 1994, EPA will complete a final Removal Site Action Plan in which the final scope of the project will be delineated and the final cost estimate will be calculated. Between now and November 1994, the New England Region estimates that a ceiling increase of approximately \$12,362,000 will be required to support the following response activities:

- 1) Continue removal actions of up to 47 additional residential properties in Stratford, CT. The soil will be transported to the Raymark facility in Stratford for storage. Complete removal

¹Copies of the original Action Memorandum dated June 12, 1993, and Addendums dated September 10, 1993 and March 15, 1994, are available in the Administrative Record and at EPA Environmental Services Division Lexington Office.



activities at the satellite sites located at 3rd and 4th Ave. site and Elm Street;

- 2) Continue site investigation activities of an estimated 30 additional properties;
- 3) Prepare the Raymark facility parking lot to receive bulk soil contaminated with Raymark waste. The soil will be deposited in piles 15 feet high and covered or placed in on-site lagoons and covered with clean fill. The piles will be built under a moveable dome structure to enclose the work area. As a soil pile is constructed, the dome will be moved across the parking lot to accommodate more soil; and
- 4) Complete the residential indoor dust sampling of homes where Raymark waste was removed or will be removed from the yards. Those homes found to contain Raymark waste above the indoor action levels documented below will be cleaned; and
- 5) Evaluate and respond if necessary to municipal and commercial properties which contain Raymark waste.

The proposed actions, if authorized, will ensure that the Agency can provide a timely response to effectively minimize and/or mitigate damage to the public health or welfare, or the environment which may result from hazardous substances derived from Raymark waste.

On January 18, 1994, the Raymark Industries Inc., Sites were proposed to be listed on the National Priority List. This is not a nationally significant removal action.

II. Site Conditions and Background

A. Site Description

From approximately 1920, until the mid-1980s, Raymark Industries, Inc. manufactured brake linings, clutch parts and other asbestos based products at its Stratford facility. Raymark's manufacturing processes generated wastes containing hazardous and toxic substances including asbestos, PCBs, and Pb. An unknown quantity of such wastes were disposed of off-site as fill material in various locations around Stratford.

Since the spring of 1993, EPA has investigated approximately 500 sites throughout Stratford to determine the locations where Raymark waste was disposed of. The Agency for Toxic Substances and Disease Registry (ATSDR), in coordination with state and local health officials, has reviewed EPA's findings to estimate the public health threat posed by these wastes. As a result of this investigation, Raymark waste was found to present a health

threat at numerous locations in Stratford including school yards, recreational areas, and residential properties. EPA and the Connecticut Department of Environmental Protection (CT DEP) have conducted interim measures and will continue to conduct final measures at these locations to minimize public contact with the contamination.

Please refer to the Action Memorandum and Addendums for additional Site background information.

B. REMOVAL ACTIONS

Residential Properties

In the fall of 1993, removal cleanup activities began at three residential areas located at Patterson Avenue, Elm Street and 3rd and 4th Ave. In December 1993, cleanup of the Patterson Avenue and the Elm Street Sites were completed, and cleanup of the 3rd and 4th Avenue Site, which is comprised of multiple residential properties, was suspended until the spring due to severe winter weather conditions. Restorations and excavations resumed in the spring of 1994.

The contaminated soil from these sites was brought to the Raymark facility where an estimated 12,292,000 kg of material was received, bagged in 1.5 cubic yard bags for storage, and placed inside buildings between September and December 1993.

Between January and April 1994, EPA revised the cleanup plan for the residential properties, including the definition of Raymark waste. The following definition was adopted: in a single sample, at least two of the three indicator contaminants must be present at concentrations above those listed below for the material to be considered Raymark waste.

Table 1: Definition of Raymark Waste in Soil

CONTAMINANT	CLEANUP LEVEL
Lead (Pb)	400 ppm
Polychlorinated Biphenyls (PCBs)	1 ppm
Asbestos	1 %

On April 20, 1994, EPA cleanup contractors returned to Stratford to resume removal activities. The Raymark facility was opened and prepared for temporary storage of bulk contaminated soil. Bagging was discontinued because it was incompatible with long range plans which required exterior storage.

On April 27, 1994, removal activities at the 3rd and 4th Ave.

Site resumed. As of May 13, 1994, 6 of those properties had been completed and an additional 1,974,000 kgs of contaminated soil had been delivered to the Raymark facility.

To date, removal cleanup actions have been completed at approximately 8 residential properties, and a total of 27 million kgs (20,000 cubic yards) of soil and debris contaminated with Raymark waste have been brought to the Raymark facility.

Indoor Dust

In the March 15, 1994 Action Memorandum Addendum, EPA identified 1 home in which the indoor dust was contaminated (by PCBs) at levels ATSDR concluded presented a health threat to the residents. On May 17, 1994, EPA completed the interior cleanup of this residence.

Region I has also identified thus far an additional 4 homes which potentially were contaminated with Raymark waste, and re-sampled 3 of these homes on April 14, and May 11, 1994 to determine if Raymark waste was indeed present. The fourth homeowner refused EPA's offer to re-sample opting instead to clean their own home. To date, the results of this sampling have not been reported. Interior contamination investigations will continue.

Region I has refined its definition of Raymark waste in residential indoor dust to allow differentiation between Raymark waste and ubiquitous contaminants. Since indoor dust often contains levels of Pb associated with other sources, e.g., Pb paint, determining the exact source of Pb in house dust by simply measuring the contaminant level is not possible. Analytical results of Raymark wastes indicate that high concentrations of copper (Cu), and tin (Sn) are also present. Pb paint, on the other hand, contains high levels of titanium (Ti), barium (Ba), and zinc (Zn). The definition of Raymark waste for indoor contamination therefore now includes metals that are associated with Raymark waste but not with Pb paint.

Analyzing for Pb, Ba, Cu, Sn, Ti, and Zn, will assist EPA to distinguish between Raymark waste and Pb paint. Therefore, the definition for Raymark waste contaminated indoor dust is: dust in which at least 2 of the following contaminants are present in one sample above the concentrations indicated in Table 2.

Table 2: Definition of Raymark Waste for Interior Contamination

Contaminant	Sample Type	Cleanup Goal
Pb (with Copper >500ppm and Tin >200ppm in dust)	Wipe and Vacuum	10 ug/ft ²
PCBs Aroclors 1262 and 1268	Wipe and Vacuum	10 ug/100cm ² total PCBs in 1 sample
Asbestos - Chrysotile	Vacuum Air	1 % in Dust 70 s/mm ² TEM, 0.01 f/cc PLM, or ≤ ambient outdoor levels

C. OTHER ACTIONS

The Remedial Investigation/Feasibility Study (RI/FS) is underway at the Housatonic Boat Club, Spada Property and Morgan Francis Sites commercial sites. Phase I of the RI began with a hydrogeological investigation of these properties. Between March 28 and May 4, 1994, 35 soil borings and 25 ground water monitoring wells were installed and sampled. To date, no sampling results have been reported.

The Engineering Evaluation/Cost Analysis (EE/CA) study to determine the remedy at the Raymark facility is underway. Samples of Raymark waste were taken for treatability studies. The treatment options under consideration were Stabilization/Solidification (in-situ and ex-situ) and thermal desorbtion.

For more detail, please refer to the Raymark Industries Inc. POLREPs.

D. ACTIONS BY OTHER FEDERAL AGENCIES

On March 24, 1994, EPA and the U.S. Army Corp of Engineers (USACE) entered into an interagency agreement² (IAG) by which the USACE will take the lead on several tasks at the Raymark Industries, Inc. Site. These tasks include: 1) excavation and restoration of residential lots determined by EPA to be contaminated with Raymark waste; 2) operation of the soil storage areas at the Raymark facility; 3) conducting extent-of-contamination or other sampling at residential properties; and 4) continuing

² Region I has several IAGs with USACE for this site.

review/oversight of Raymark Industries, Inc. Site RCRA cleanup. The USACE is scheduled to start on-site work during the first week of August 1994.

U.S. Fish and Wildlife Service visited the site during the week of June 13, 1994, to assist EPA delineate the wetlands located around the Site. In addition, the U.S. Fish and Wildlife Service and the National Oceanographic and Atmosphere Administration (NOAA) will assist EPA to prepare a surface water/sediment/ecological sampling plan which will be implemented in July or August of 1994.

E. State and Local Authority Roles

The DEP has responded to the contamination by implementing interim measures at several sites known to be contaminated with Raymark waste. In the summer of 1993, DEP constructed a temporary cap over the exposed waste at the Short Beach Site utilizing a portion of the \$5 million they allocated to this project. The DEP has committed to implementing the final remedy at Wooster School and is currently developing options with assistance from EPA.

The Town of Stratford and the Stratford Health Department have provided community outreach to inform the local residents of the on going cleanup efforts.

III. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities

A. Threats to Public Health or Welfare

The potential exists that residents will be exposed to hazardous substances due to unsafe levels of Pb, PCBs, and asbestos in yard soil and indoor dust. The primary routes of exposure are through ingestion of contaminated soil and/or dust and inhalation of airborne contaminated dust. The following excerpt from a report published by the ATSDR describes the potential health impacts of PCBs:

"Some PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects, and cancer. Therefore, it is prudent to consider that there may be health hazards for humans. Human studies to date show that irritations, such as acne like lesions and rashes, can occur in PCB-exposed workers. Other studies of people with occupational exposure suggest that PCBs might cause liver cancer. Reproductive and developmental effects may also be related to occupational exposure and eating of contaminated fish. While the role of PCBs in producing cancer, reproductive and developmental effects cannot be clearly delineated, the suggestive

evidence provides an additional basis for public health concern about humans who may be exposed to PCBs."³

The following excerpt from a report published by the ATSDR describes the potential health impacts of Pb:

"Exposure to lead is especially dangerous for unborn children because their bodies can be harmed while they are being formed. If a pregnant woman is exposed to lead, it can be carried to the unborn child and cause premature birth, low birth weight, or even abortion. Young children are at risk because they swallow lead when they put toys or objects soiled with lead-containing dirt in their mouths. More of the lead swallowed by children enters their bodies, and they are more sensitive to its effects. For infants, or young children, lead exposure has been shown to decrease intelligence (IQ) scores, slow their growth, and cause hearing problems. These effects can last as children get older and interfere with successful performance in school.

... Because laboratory animals fed lead to their diet throughout their lives have developed tumors, lead should be thought of as a probable cancer-causing substance in humans.

Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Lead exposure may increase blood pressure in middle-aged men Lead may affect (a man's) sperm or damage other parts of the male reproductive system."⁴

The potential impact of asbestos exposure are chronic in nature and may not manifest themselves for a number of years after initial exposure. Diseases that are linked to asbestos include asbestosis, a chronic lung inflammation, and a variety of lung cancers which vary in their prognoses. The most deadly cancer which is linked to inhalation of asbestos is mesothelioma, a disease which results in the destruction of the mesothelium, the lining surrounding various thoracic organs. Mesothelioma is 100% fatal within a period of 1 to 2 years after diagnosis.

³Toxicological Profile for Selected PCBs (Aroclor - 1260, 1254, 1248, 1242, 1232, 1016), Published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1989, Section 1, p 2.

⁴Toxicological Profile for Lead, Published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1990, Section 1, pp. 2-3.

B. Quantities and Types of Substances Present

The actual number of homes with Raymark waste in their yards has not been determined to date because not all of the lots reported to contain Raymark waste contamination have been sampled. However, to date 47 homes have been identified to contain Raymark waste that requires removal. The actual quantity of waste involved is unknown pending extent-of-contamination sampling on each property, and less than one third of these are completed. As stated above, we have so far removed 27 million kgs from 8 properties.

The actual number of homes contaminated indoors with Raymark waste is not known at this time because: 1) The actual number of homes with Raymark waste in their yards has not been determined and only those homes which have Raymark waste removed from their yards are eligible for indoor cleanups; and 2) EPA has not yet sampled the homes from which Raymark waste is removed from the yards to determine whether the waste has entered the home. EPA is planning to sample the indoor dust of the 47 homes mentioned above.

EPA is currently evaluating the scope of the project and plans to complete by November 1994 a report fully describing the number of homes, the estimated quantity of Raymark waste, and the total cost of the project.

IV. Endangerment Determination

Actual or threatened releases of hazardous substances, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare, or the environment.

On May 26, 1993, ATSDR issued a Public Health Advisory in which they concluded that an imminent public health hazard was associated with exposure to Raymark waste and the sites containing the waste. ATSDR, in coordination with Connecticut Department of Public Health and Addiction Services (DPHAS) and the Stratford Health Department, continues to review individual property data when requested to advise EPA on the potential health impact posed by Raymark contamination.

V. Exemption From Statutory Limits

Please refer to the June 12, 1993, Action Memo Addendum in which statutory limits were waived.

I. Proposed Actions

A. Proposed Actions

1) Complete a final Site Action Plan delineating the final scope and cost of the project.

2) Abate the health threats posed by Raymark waste in residential properties.

3) Remove a sufficient volume of Raymark waste from each property so as to eliminate any future involvement with state and federal agencies.

4) Sample residential indoor dust in homes where Raymark contamination is found in the yard soil and warrants soil removal.

5) EPA will conduct cleanup of residential indoor contaminated dust only where: a) Raymark waste is determined to be in the yard and will be removed by EPA; and b) Raymark waste is determined to be in the home at levels that EPA has determined to be a threat to public health or welfare, and c) residents must grant access to the agencies to perform indoor Pb-paint screening, and if Pb-paint is present, the home owner or occupant must complete Pb-paint abatement before EPA cleans the home. Pb-paint abatement is necessary to prevent re-contamination of the household dust with Pb after the house is cleaned.

B. CLEANUP GOALS

Residential Properties

The current soil cleanup goals are shown in Table 1:

EPA is currently planning to use the Integrated Exposure Uptake Biokinetic Model for Pb in Children (UBK Model) to evaluate the cleanup goal for Pb pending acquisition of the data necessary to run the model. This is estimated to occur by late summer. The results of the modelling may be used to adjust the Pb in soil cleanup level.

Residential Indoor Dust

Cleanup goals for Pb and PCBs are based on surface area loading rates of contaminants and are considered protective of human health and welfare. The indoor dust cleanup goals are:

PCBs: The EPA PCB Spill Policy, 40 C.F.R. §761.125(b)(1)(i), states that the cleanup goal for residential interiors is 10 ug/100cm².

Pb: The ATSDR recommended a cleanup goal for residential interiors of 10 ug/ft².

Asbestos: The TSCA AHERA regulations at 40 CFR §763.90(i) define the cleanup goal as: 1) visual inspection to ensure the job has been properly completed; and 2) air sampling including 5 indoor air samples and 5 concurrent background samples placed outside and around the home. The area is considered clean if the indoor sample results indicate levels below 0.01 fibers per cc or below the background levels.

B. Discussion of how the Removal Action is Not Inconsistent with the Remedial Activities at the Site.

These actions are not inconsistent with long-term remedial goals. This removal action will seek permanent abatement of risks posed by Raymark waste in residential property soil and in interior residential dust.

For further discussion, please refer to the June 12, 1993, Action Memo Addendum.

C. Applicable or Relevant and Appropriate Requirements (ARARs)

The following are Applicable or Relevant and Appropriate Requirements ("ARARs") of federal and state environmental laws for the removal action. Pursuant to 40 C.F.R. § 300.415(i), EPA must comply with these requirements to the extent practicable considering the exigencies of the situation.

The Federal and State ARARs for the Site were described in the previous Action Memos and Addendums. However, as the scope of the project expanded, it became apparent that the previous analyses needed to be amended. EPA conducted a new ARARs analysis based on the current understanding of the size of the project and the work to be completed. The results of this analysis are presented below. This analysis was conducted with the assistance of the Office of Regional Counsel.

1. Clean Air Act regulations at 40 C.F.R. Part 61, Subpart M (National Emissions Standards for Hazardous Air Pollutants)

Applicable Federal ARARs

These provisions are applicable during the excavation, consolidation, and capping of asbestos contaminated materials.

§61.150 Standards for manufacturing, fabrication, demolition, renovation, and spraying operations.

§61.151 (except 61.151(d)) Standard for inactive disposal sites for asbestos mills and manufacturing and fabricating operations.

§61.154(a)-(d) Standard for active waste disposal sites.

2. Clean Water Act Section 404 Program regulations

Note: For a detailed discussion of Wetlands Protection ARARs and their applicability to the Site, please refer to the attached memo to the file Subj: ARARs for Wetlands.

Applicable Federal ARARs

40 C.F.R. §230.10 These regulations prohibit avoidable or significant impacts on the aquatic environment through the identification of less damaging, practicable alternatives, among other requirements.

40 C.F.R. §230.70 - 77 These regulations set forth actions to minimize adverse effects to wetlands.

33 C.F.R. § 330.6 These regulations set forth management practices to be employed, to the maximum extent practicable, to minimize the adverse effects of discharges into the aquatic environment.

Executive Order 11990, Protection of Wetlands

This Executive Order requires that Federal agencies will avoid undertaking actions in wetlands unless (1) there is no practicable alternative, and (2) that the proposed action includes all practicable measures to minimize harm to the wetlands. (See especially Section 2 of the Executive Order.)

40 C.F.R. Ch.1, Appendix A, "Statement of Procedures on Floodplain Management and Wetlands Protection"

This statement provides that EPA will avoid wherever possible the long and short term impacts associated with the destruction of wetlands, and that if there is no practicable alternative to affecting a wetland, the Agency will act to minimize potential harm to the wetlands and shall restore wetlands.

To be Considered Federal Policies

Environmental Fact Sheet, "Controlling the Impacts of Remediation Activities in or around Wetlands", EPA530-F-93-020, Aug. 1993.

Applicable State ARARs

Connecticut Tidal Wetlands Regulations, 22a-30-10 (Criteria for Review)

These regulations set forth the criteria that must be met before conducting activities in tidal wetlands.

To-Be-Considered State Policies

Connecticut Coastal Policies and Use Guidelines, Planning Report no. 30 (Tidal Wetlands section and policies referred to therein as appropriate).

These policies and guidelines are intended to preserve tidal wetlands and encourage rehabilitation and restoration of degraded tidal wetlands.

3. **Regulations Regarding the Storage, Treatment, and Disposal of Hazardous Wastes**

Applicable Federal ARARS

Standards Applicable to Generators of Hazardous Waste 40 CFR Part 262, Subpart B: Manifesting

- 262.20 General Requirements for manifesting
- 262.21 Acquisition of manifests
- 262.22 Number of copies of manifests
- 262.23 Use of the manifest

40 CFR 262, Subpart C: Pre-Transport Requirements

- 262.30 Packaging
- 262.31 Labeling
- 262.32 Marking

Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities 40 CFR 265, Subpart I: Use and Management of Containers

Note: The previous Action memos and addendums cited provisions in 40 C.F.R. §264. However, since Raymark is considered a RCRA interim status facility, §265 applies. For a detailed discussion of Subpart L - Waste Piles and its applicability to the Site, please refer to the attached memo to the file Subj: Evaluation of ARARS for the Construction of Storage Piles at the Raymark Facility During the Time-Critical Removal Action at the Stratford Sites, Stratford, CT.

- §265.171 Condition of Containers
- §265.172 Compatibility of waste with containers
- §265.173 Management of containers
- §265.174 Inspections
- §265.177 Special requirements for incompatible wastes

40 CFR §265 Subpart L - Waste Piles
§265.251 Protection from Wind
§265.252 Waste Analysis
§265.253 Containment
§265.254 Design and Operating Requirements
§265.255 Action Leakage Rates
§265.256 Special Requirements for Ignitable or Reactive
Waste
§265.257 Special Requirements for Incompatible Wastes
§265.258 Closure and Post-closure care

4. PCBs

To Be Considered

40 C.F.R. §761 PCB Subpart G: PCB Spill Cleanup Policy

Guidance on Remedial Actions for Superfund Sites with PCB Contamination (EPA/540/G-90/007 Aug. 1990)

5. Land Disposal Restrictions 40 CFR Part 268, Subpart C: Prohibitions on Land Disposal and Subpart D - Treatment Standards

Applicable Federal ARARs

Note: For a detailed discussion of the land disposal restrictions and its applicability to the Site, please refer to the attached memo to the file Subj: Evaluation of ARARs for the Construction of Storage Piles at the Raymark Facility During the Time-Critical Removal Action at the Stratford Sites, Stratford, CT.

40 C.F.R. §268.35 Waste Specific Prohibitions - Third Third Wastes

40 C.F.R. §268.41 Treatment Standards Expressed as Concentrations in Waste Extract
§268.50 Prohibitions on Storage of Restricted Wastes

6. To Be Considered

Draft Interim Guidance on Establishing Soil Lead Cleanup Levels of Superfund Sites and Update (OSWER Dir. No. 9355.4-02 (June 13, 1989) and Update (August 29, 1991).

7. To Be Considered

Department of Housing and Urban Development Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing. 55 Fed. Reg. 14556 (April 18, 1990).

D. Project Schedule

The Site Action Plan will be completed by November 1994. Residential property soil removal activities are expected to be completed by October, 1995.

Indoor dust sampling of up to an additional 60 homes is anticipated to begin in July 1994, and be completed by September 1994.

E. Project Ceiling Increase Estimate

The Interagency Agreement with the USCG has been amended to increase its ceiling. Amounts in the "Authorized Ceiling" column reflect actual spending and ensure spending keeps within the Action Memo ceiling.

STRATFORD SITES COST:

	Authorized Ceiling	Cost to Date	Balance	Proposed Ceiling
ERCS:	\$7,325,000	\$5,065,282	\$2,259,718	\$7,325,000
USACE:	\$4,500,000	\$963,050	\$3,536,950	\$10,844,000
USCG:	\$115,742	\$82,918	\$32,824	\$115,742
CONTINGENCY:	\$0	\$0	\$0	\$1,000,000
TAT:	\$2,500,000	\$2,297,146	\$202,854	\$2,950,000
ARCS:	\$1,367,378	\$891,145	\$476,233	\$1,367,378
REAC:	\$355,080	\$351,588	\$3,492	\$508,080
CLP:	\$1,200,000	\$1,157,487	\$42,513	\$2,980,000
ESAT:	\$425,000	\$393,021	\$31,979	\$550,000
CONTINGENCY:	\$0	\$0	\$0	\$600,000
Total Extramural:	\$17,788,200	\$11,201,637	\$6,586,563	\$28,240,200
EPA:	\$2,900,000	\$2,757,659	\$142,341	\$4,430,000
CONTINGENCY:	\$0	\$0	\$0	\$380,000
Total Intramural:	\$2,900,000	\$2,757,659	\$142,341	\$4,810,000

TOTALS: \$20,688,200 \$13,959,296 \$6,728,904 \$33,050,200

RAYBESTOS BALLFIELD:

	Authorized Ceiling	Cost to Date	Balance	
ERCS:	\$1,070,000	\$915,123	\$154,877	N/A
USACE:	\$25,000	\$12,369	\$12,631	N/A
TAT:	\$116,865	\$116,865	\$0	N/A
CLP:	\$5,855	\$5,855	\$0	N/A
ESAT:	\$15,765	\$15,765	\$0	N/A
EPA:	\$266,515	\$234,223	\$32,292	N/A

TOTALS: \$1,500,000 \$1,300,200 \$199,800

RAYMARK (PRP Lead):

	Authorized Ceiling	Cost to Date	Balance	
ERCS:	\$1,400,000	\$0	\$1,400,000	N/A
USACE:	\$50,000	\$31,861	\$18,139	N/A
EPA:	\$406,000	\$87,916	\$318,084	N/A
CLP:	\$50,000	\$24,653	\$25,347	N/A
TAT:	\$55,000	\$54,807	\$193	N/A

TOTALS: \$1,961,000 \$199,237 \$1,761,763

TOTAL PROJECT CEILING

	Authorized Ceiling	Cost to Date	Balance	Proposed Ceiling
STRATFORD	\$20,688,200	\$13,959,296	\$6,728,904	\$33,050,200
RAYBESTOS	\$1,500,000	\$1,300,200	\$199,800	Unchanged
RAYMARK	\$1,961,000	\$199,237	\$1,761,763	Unchanged
TOTAL:	\$24,149,200	\$15,458,733	\$8,690,467	\$36,511,200

I. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in continuing risk to the public health through prolonged exposure to PCBs, Pb, and asbestos in residential yard soil.

II. OUTSTANDING POLICY ISSUES

N/A

III. ENFORCEMENT

Please refer to the September 30, 1993 Action Memo Addendum, Appendix B.

IX. RECOMMENDATION

This decision represents the selected removal action for the Raymark Industries Inc., Sites developed in accordance with CERCLA as amended, and is consistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on documents that will be included in the Administrative Record for the Site.

Conditions at the Raymark Industries Inc., Sites meet the NCP Section 300.415 (b)(2) criteria for a removal. The applicable NCP Section 300.415 criteria for a removal action is:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." [300.415 (b) (2) (i)]

I recommend your approval of the proposed ceiling increase and change in the scope of the response request for the Raymark Industries Inc., Sites ACTION MEMORANDUM. A ceiling increase composed of \$10,452,000 for extramural costs (of which \$7,344,000 for extramural cleanup contractor costs) and \$1,910,000 for intramural costs is requested. The total ceiling increase, if approved, will be \$12,362,000. If approved the new Site ceiling would be \$36,511,200. You may indicate your approval or disapproval by signing below.

REGIONAL ADMINISTRATOR

Approve: _____ Date: _____

Disapprove: _____ Date: _____

Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

enforcement Sensitive Material Attached

DATE: MAR 15 1994

SUBJ: Amendment to the Scope of the Response Request for the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut.
ACTION MEMORANDUM

FROM: Alex Sherrin, On-Scene Coordinator
Site Evaluation and Response Section II

TO: John P. DeVillars, Regional Administrator

CERCLIS ID#: CTD983903717

SITE ID#: R4

I. Purpose

The purpose of this memorandum is to amend the Scope of the Response Request in the ACTION MEMORANDUM: Request for Removal Action at the Raymark Industries Inc., Sites, Stratford, Fairfield County, Connecticut. (Attached are copies of the original Action Memorandum dated June 12, 1993, and the Addendum dated September 10, 1993.) Approval and authorization are hereby requested to allocate \$504,000 from the existing Site ceiling authorized on September 30, 1993, to:

- 1) Abate contamination of up to 5 residences found to be contaminated with PCBs or PCBs and lead (Pb) which appeared to have originated from Raymark waste disposed of on such properties. Of these 5 residences; 4 will be re-sampled as soon as possible to determine if a clean up action is warranted. The contamination data in the fifth home is sufficient to warrant an immediate clean up. Residences will be cleaned by a combination of vacuuming and washing surfaces, and, if necessary, by disposing of contaminated furniture;
- 2) As a prerequisite to potential interior clean ups at additional homes in Stratford, conduct an assessment of background indoor levels of asbestos, Pb and PCBs (i.e., the marker contaminants of Raymark waste) in homes not contaminated with Raymark waste; and
- 3) Conduct clean up of other additional homes with contaminated dust only where: a) Raymark waste has been



identified in the exterior surface of the residential property (e.g., in soil); and b) Raymark waste is identified in the interior of the home at levels warranting response.

The proposed actions, if authorized, will ensure that the Agency can provide, or assist other agencies in providing, a timely response to effectively minimize and/or mitigate damage to the public health or welfare, or the environment which may result from hazardous substances derived from Raymark waste present in these homes.

On January 18, 1994, the Raymark Industries Inc., Sites were proposed to be listed on the National Priority List. This is not a nationally significant removal action.

II. Site Conditions and Background

A. Site Description

From approximately 1920, until the mid-1980s, Raymark Industries, Inc. manufactured brake linings, clutch parts and other asbestos based products at its Stratford facility. Raymark's manufacturing processes generated wastes contaminated with hazardous and toxic substances including asbestos, PCBs, and Pb. An unknown quantity of such wastes were disposed of off-site as fill material.

Starting in the spring of 1993, EPA conducted an extent-of-contamination investigation to determine the locations where Raymark waste was disposed of in Stratford, Connecticut. As a result of this investigation, Raymark waste was found in surface soil at locations including school yards, recreational areas, and residential properties. EPA and the Connecticut Department of Environmental Protection (CT DEP) are currently conducting interim and final measures at these locations to minimize contact with the contamination.

Please refer to June 12, 1993, Action Memo and September 10, 1993 Addendum for additional Site background information.

The detection of Raymark waste in surface soil on residential properties raised concerns that the contamination may have migrated inside the homes. The potential migration pathways included residents or pets tracking contaminated dirt into their homes and wind currents carrying contaminated dust in the air into the homes.

Between August 30, 1993, and September 1, 1993, dust in the interiors of homes was sampled to determine if Raymark waste was present. Sampling took place at 15 homes identified as having exterior Raymark waste contamination (e.g., in yard soil) and at

which the Agency for Toxic Substances and Disease Registry (ATSDR) concluded there exists an "imminent health threat" or a "health threat". In addition, 2 control homes were sampled. All the homes were sampled by a vacuum equipped with a high efficiency particulate (HEPA) filter. The samples were analyzed by the Contract Lab Program (CLP) for Pb, PCBs and asbestos. The final results were delivered on October 20, 1993.

The results indicated that the dust samples contained total PCB concentrations generally ranging from non-detect (ND) to 4.37 parts per million (ppm), with one exception of 49 ppm total PCBs. Pb levels ranged from ND to 68,200 ppm. The dust samples contained no detectable asbestos.

In ATSDR's memorandum dated November 20, 1993, ATSDR concluded that the contamination inside the homes was, at least in part, derived from Raymark waste. ATSDR's finding meets the criteria of EPA's August 12, 1993, Guidance "Response Actions at Sites with Contamination Inside Buildings".¹

B. Other Actions To Date

Since June 12, 1993, EPA has completed surface and depth sampling at nearly all the approximately 500 properties referred to EPA for sampling. In the fall of 1993, clean up began at two residential properties located at Patterson Avenue and Elm Street. Restoration of the Patterson Avenue property is nearly complete, however, the Elm street restoration was not started before the Site was suspended temporarily for the winter. The Third Street Site removal action also began in the fall but was not completed before the winter suspension began.

¹EPA guidance for responding to indoor contamination is provided in OSWER Directive 9360.3, "Response Actions at Sites with Contamination Inside Buildings," dated August 12, 1993. This document addresses the conditions under which it is appropriate to undertake a Removal Action indoors. To appropriately use CERCLA authority, the guidance states that, "(1) the indoor contamination must result in a release or a threat of release into the environment, or (2) indoor contamination may be contamination that is a direct result of a release into the environment from a non-natural source that migrates into the building or structure. For example, contamination in a yard may be tracked into a building on the feet of the residents or workers, or may migrate into the building through an open window or basement walls. In this situation, a release into the environment has occurred and has caused a building to become contaminated with the hazardous substance, pollutant, or contaminant." Guidance, pp. 4-5 (emphasis added).

A total of 2,538,180 kg of contaminated soil were removed from the Sites to the Raymark facility and bagged for interim storage. The final load of soil for bagging was delivered to the Raymark Site on December 18, 1993. Preparations for receiving and storing bulk soil in the spring of 1994 were initiated. For more detail, please refer to the Raymark Industries Inc. POLREPs.

C. State and Local Authority Roles

The Connecticut Department of Environmental Protection is responding to the contamination with implementation of interim measures at several of the Sites known to be contaminated with Raymark waste. These sites include Short Beach, Wooster School, and Ferry Blvd. The State has committed to implementing the final remedy at Wooster School. The DEP will also review the Indoor Dust Removal Action Work Plan.

The Town of Stratford and the Stratford Health Department have provided community outreach to inform the local residents of the on going clean up efforts. Local officials will also review the Indoor Dust Work Plan.

In addition, the Stratford Health Department is conducting a Pb-based paint survey in the homes at which EPA will conduct indoor dust clean ups. This survey is being conducted to assist EPA in identifying those homes contaminated with Pb from Raymark waste.

III. Threats to Public Health or Welfare or the Environment, and Statutory and Regulatory Authorities

Conditions presently exist at the homes which, if not addressed by implementing the response action documented in this Action Memorandum, may lead to an imminent and substantial endangerment to the public health, or welfare, or the environment.

Threats to Public Health or Welfare

The potential exists that residents will be exposed to hazardous substances. Currently, contamination has been identified in the living spaces of residential homes. The current and future threat at the homes is posed by the presence of Pb and PCBs in the residential dust. The highest levels of Pb and PCB contamination in the 5 homes is presented in Table 1.

Table 1: Indoor Dust Sampling Results of the 5 Homes to be Re-sampled/Cleaned.

Total PCBs (ppm)	Pb (ppm)
49.0	1770
4.37	148
4.1	148
0.82	2640
2.59	2470

The primary routes of exposure are through inhalation of airborne dust and direct contact with contaminated dust followed by ingestion. The following excerpt from a report published by the ATSDR describes the potential health impacts of PCBs:

"Some PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects, and cancer. Therefore, it is prudent to consider that there may be health hazards for humans. Human studies to date show that irritations, such as acne like lesions and rashes, can occur in PCB-exposed workers. Other studies of people with occupational exposure suggest that PCBs might cause liver cancer. Reproductive and developmental effects may also be related to occupational exposure and eating of contaminated fish. While the role of PCBs in producing cancer, reproductive and developmental effects cannot be clearly delineated, the suggestive evidence provides an additional basis for public health concern about humans who may be exposed to PCBs."²

The following excerpt from a report published by the ATSDR describes the potential health impacts of Pb:

"Exposure to lead is especially dangerous for unborn children because their bodies can be harmed while they are being formed. If a pregnant woman is exposed to lead, it can be carried to the unborn child and cause premature birth, low birth weight, or even abortion. Young children are at risk because they swallow lead when they put toys or objects soiled with lead-containing dirt in their mouths. More of the lead swallowed by children enters their bodies, and they are more sensitive to its effects. For infants, or young children, lead exposure has been shown to decrease

²Toxicological Profile for Selected PCBs (Aroclor - 1260, 1254, 1248, 1242, 1232, 1016), Published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1989, Section 1, p 2.

intelligence (IQ) scores, slow their growth, and cause hearing problems. These effects can last as children get older and interfere with successful performance in school.

... Because laboratory animals fed lead to their diet throughout their lives have developed tumors, lead should be thought of as a probable cancer-causing substance in humans.

Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Lead exposure may increase blood pressure in middle-aged men Lead may affect (a man's) sperm or damage other parts of the male reproductive system."³

The ATSDR, in conjunction with Connecticut Department Public Health and Addiction Services (CT DPHAS) and the Town of Stratford Health Department, reviewed the analytical reports on the home dust samples. In a memo dated October 20, 1993, ATSDR wrote that contamination in the home containing 49 ppm total PCBs presented a Health Threat (i.e., it is likely that some people, especially children, will be exposed to contaminants at levels that will cause harmful effects). In the other 4 homes, ATSDR concluded that the contamination presented a Health Concern (i.e., some people, especially children, maybe exposed to lead at levels that will cause harmful effects) or a Possible Health Threat (i.e., there is a potential that some people, especially children, will be exposed to contaminants at levels that will cause harmful effects) (See attached ATSDR October 20, 1993, "Record of Activity," for more information).

Quantities and Types of Substances Present

The actual number of homes contaminated with Raymark waste is not known at this time because: 1) EPA has not yet sampled all homes known or suspected of having exterior Raymark contamination; 2) EPA has not definitively determined the levels of contamination in the 5 homes, 3) EPA has not evaluated the homes that it sampled for other possible sources of Pb and PCB contamination; and 4) EPA must further evaluate the background levels of these contaminants in Stratford homes to determine the background household contaminant loading from sources other than Raymark waste.

Of the 17 homes sampled during the first sampling event, 14 contained levels of contamination which the health agencies considered a health concern. However, the source of the

³Toxicological Profile for Lead, Published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1990, Section 1, pp. 2-3.

contamination was considered to be other than Raymark waste for most of these homes. To determine the extent to which Pb paint may be contributing to the problem in these homes, the Town of Stratford is currently conducting a Pb paint study.

EPA will conduct an additional sampling event this year to further delineate the migration of contamination inside homes in Stratford. The purpose of this study will be to determine: 1) the background extent of Pb, PCB, and asbestos contamination inside homes in Stratford; 2) other possible sources of the contamination; and 3) the extent of Raymark waste contamination inside homes in Stratford. This study will include homes that are known or suspected to have exterior Raymark waste contamination, and control homes which are known not to have exterior Raymark waste contamination.

This second sampling event may reveal additional homes contaminated by Raymark waste which require abatement. If EPA identifies additional homes which require abatement due to the presence of Raymark waste, the scope of this indoor clean up program will broaden requiring a corresponding increase in the reallocation of funding.

IV. Endangerment Determination

ATSDR has determined that the concentrations of contaminants present in the dust of the 1 residence proposed to be cleaned poses a Health Threat. In addition, ATSDR has determined that the concentrations of contaminants in the dust of 4 additional homes poses either a Health Concern, or a Possible Health Threat.

Actual or threatened releases of hazardous substances in the homes, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Please refer to the June 12, 1993, Action Memo and Addendum.

VI. Proposed Actions

A. Proposed Actions

STRATEGY

In a meeting between Region I and the Office of Solid Waste and Emergency Response (OSWER) staff on November 3, 1993, a strategy was developed and agreed upon for addressing the indoor

contamination problem. This strategy, embodied in the Summary of Indoor Dust Strategy dated November 3, 1993, included the 5 priorities listed below.

- 1) Clean up of up to 5 homes with indoor PCB or PCB/Pb contamination. Interim or final clean up actions with respect to outdoor soil clean up would be completed before, or concurrently with, the indoor dust clean up to prevent re-contamination of home interiors.
- 2) As a prerequisite to further clean up actions, conduct an assessment of background levels of asbestos, Pb and PCBs in other homes in Stratford.
- 3) EPA will request the Town of Stratford to conduct Pb inspections of homes and attempt Pb abatement, as appropriate.
- 4) Subsequent to determination of the background levels, conduct clean up of contaminated dust only where: a) Raymark waste is determined to be in the yard; and b) Raymark waste is determined to be in the home at levels that EPA has determined to be a threat to public health or welfare. EPA considers that, as a prerequisite to homes being considered as candidates for interior clean up, residents must grant access to the Town to perform indoor Pb-paint screening.
- 5) EPA will continue sampling dust in homes where surface Raymark contamination is found and soil removal activities are conducted.⁴

After further evaluation of the data, the OSC determined that additional sampling was required in 4 of the 5 homes before the indoor dust clean up could be performed.⁵ As a result, the first priority listed above (i.e., clean up of the 5 initial homes) was modified to include the following: 1) EPA will clean the house with 49 ppm total PCBs as soon as possible; 2) EPA will re-sample the other homes to determine the loading of Pb and PCBs per unit area in the homes. This will assist EPA in evaluating the need for further action at these homes.

⁴Region I is currently examining its Removal Action Policy regarding definition of Raymark waste and determination of Raymark action levels.

⁵ Memorandum, "Raymark Sites: Residential Interior Cleanups," issued February 28, 1994.

CLEAN UP

The indoor dust clean up goals are:

PCBs: The EPA PCB Spill Policy states that the clean up goal for residential interiors is 10 ug/100cm². 40 C.F.R. §761.125(b)(1)(i).

Pb: The ATSDR recommended a clean up goal for residential interiors of 10 ug/ft².

These clean up goals are based on surface area loading rates of contaminants and are considered protective of human health and welfare.

EPA's Emergency Response Team provided Region I with a PCB/Pb Residential Clean Up Actions Plan for the abatement of PCB and Pb contamination in the living spaces of the initial 5 homes. EPA consulted with ATSDR regarding this plan in a conference call on January 13, 1994. This plan is summarized below.

1) The home containing 49 ppm total PCBs

- a) Disposal - Carpets, rugs, curtains, shades, blinds located in high traffic areas.
- b) Vacuum/Wash Down - Hard surface floors and furniture, mattresses, fabric furniture, window frames/sills, ventilation/ heating ducts, and all horizontal surfaces.

2) The remaining homes that warrant clean up: If the re-sampling data indicates that clean up of any of other 4 homes is warranted, ERT has recommended the following actions.

- a) Disposal - Throw rugs in front of doors exiting to the outside.
- b) Vacuum/Wash Down - Hard surface floors and furniture, fabric furniture, rugs and carpets, window frames/sills, ventilation/heating ducts, and all horizontal surfaces.

This combination of disposing and vacuuming dust reservoirs has been found to be effective for other EPA indoor dust clean up actions and by the Agency for Human Urban Development (HUD) for indoor Pb-paint removal.

Alternative housing will be offered to the residents during the clean up of their homes.

Waste materials generated and any furniture which requires disposal will be disposed of in accordance with the NCP, RCRA, and EPA's Off-Site Rule, 58 Fed. Reg. 49200 (Sept. 22, 1993).

B. Discussion of how the removal action contributes to the performance of remedial activities at the Site.

Please refer to the June 12, 1993, Action Memo and Addendum.

Consistent with long-term remedial goals, this removal action will seek permanent abatement of risks posed by interior residential contamination in designated homes.

C. Applicable or Relevant and Appropriate Requirements (ARARs)

Please refer to the June 12, 1993, Action Memo and Addendum.

To Be Considered:

EPA Spill Policy 40 CFR §761.125 (b)(1)(i)

Department of Housing and Urban Development Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing. 55 Fed. Reg. 14556 (April 18, 1990).

D. Project Schedule

Sampling and clean up of the 5 homes is anticipated to begin in March 1994, and may be completed by April 1994. The background sampling survey is anticipated to begin in May 1994, and may be completed by July 1994.

VI. Expected Change in the Situation Should Action be Delayed or Not Taken

Delayed action will result in continuing risk to the public health. Failure to implement the removal actions may result in further exposure to levels of contaminants which may pose an imminent health threat.

In the event that a home owner denies EPA access to perform the indoor clean up, EPA will not take enforcement action to gain access to that home. Instead, EPA will provide the home owner with information on how to perform the clean up.

II. Outstanding Policy Issues

Some sampling results indicate that sources of contamination in addition to Raymark waste may be present. The background study EPA will conduct may clarify the reason for this sampling outcome.

III. Enforcement

Please refer to the June 12, 1993, Action Memo and Addendum.

IX. Recommendations

This decision represents the selected removal action for the Raymark Industries Inc., Sites developed in accordance with CERCLA as amended, and is consistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on documents that will be included in the Administrative Record for the Site.

Conditions at the Raymark Industries Inc., Sites meet the NCP Section 300.415 (b)(2) criteria for a removal. The applicable NCP Section 300.415 criteria for a removal action is:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." [300.415 (b) (2) (i)]

I recommend your approval of the proposed change in the scope of the response request for the Raymark Industries Inc., Sites ACTION MEMORANDUM. The total cost of this change in scope, if approved, will be \$504,000 reallocated from the pre-existing \$24 million Site ceiling. No increase in the cost ceiling is requested. You may indicate your approval or disapproval by signing below.

REGIONAL ADMINISTRATOR

Approve: *John de Villars* Date: 3/15/94

Disapprove: _____ Date: _____

Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Region I Request for a Ceiling Increase and \$2M
Exemption for the Raymark Sites, Stratford, CT
-- ADDENDUM

FROM: Henry L. Longest II, Director
Office of Emergency and Remedial Response

TO: Richard J. Guimond
Assistant Surgeon General, USPHS
Acting Assistant Administrator

PURPOSE

The attached Action Memorandum is a request from Region I for a ceiling increase and \$2M exemption for removal actions at the Raymark Sites, Stratford, CT. The purpose of this memorandum is to clarify that the Region is asking the Assistant Administrator/OSWER (AA) to approve only the ceiling increase and \$2M exemption, not the 12-month exemption. This memorandum also serves to amend the Region I Action Memorandum, dated September 10, 1993, by clarifying the site description, revising the total project ceiling estimates, and presenting the rationale for conducting indoor dust sampling. Additional information is also provided to enhance the ARARs discussion. Verbal authorization of a \$2M exemption and ceiling increase up to a total project ceiling of \$4M was granted on August 8, 1993.

DISCUSSION

Region I's Action Memorandum to the AA requests a ceiling increase and exemption to the \$2M statutory ceiling on removal actions, and an exemption to the 12-month statutory time limit on removal actions. The authority to grant an exemption to the 12-month time limit has been delegated to the Regional Administrator (RA) level. Therefore, the AA's approval or disapproval of the attached Action Memorandum will be for the ceiling increase and \$2M exemption only. The signature of the RA on the attached Action Memorandum constitutes his approval of the 12-month exemption effective upon the AA's approval of the ceiling increase and \$2M exemption.



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Region I has conducted separate response actions at the Raymark Industries, Inc. facility and the Raybestos Memorial Field. These locations were not included in the site description section, nor were the costs associated with those actions included in the project ceiling estimates in the Action Memorandum. This addendum revises the site description to be consistent with the site description in the National Priorities List (NPL) proposal package. The first sentence of the Site Description section of the Action Memorandum (page 2) is amended as follows: "The Site is comprised of the Raymark Industries, Inc. facility (Raymark) and satellite locations, currently identified and yet to be identified, where waste from Raymark is known or suspected to have been received and used as fill." The total project ceiling estimate is also revised by adding the previously-approved ceilings for the separate actions at the Raymark industrial facility (\$1,961,000 total project ceiling; \$1,450,000 extramural) and Raybestos Memorial Field (\$1,500,000 total project ceiling; \$1,070,000 extramural). The revised total project ceiling is \$24,149,200 of which an estimated \$16,420,000 is for extramural cleanup contractor costs and interagency logistical, technical, and design support.

OSWER Directive 9360.3-12, dated August 12, 1993, indicates that response actions may be taken at sites with indoor contamination where the indoor contamination is the direct result of a release into the environment that migrates into a building or structure. Region I is performing indoor dust sampling at all properties categorized by the Agency for Toxic Substances and Disease Registry (ATSDR) as Imminent Health Threats or Health Threats to determine if the Raymark contamination has migrated into the homes. All of the indoor sampling data will be provided to ATSDR for ATSDR's use in updating the property-specific Health Consultations.

The State has taken the lead at some of the contaminated locations in Stratford, but has insufficient resources to address all of the contaminated properties. A ceiling increase is required to continue the removal action by excavating contaminated materials from residential properties in Stratford determined to pose health threats due to elevated levels of lead, asbestos, and polychlorinated biphenyls (PCBs) in surficial soils. The excavated materials will be transported to the Raymark industrial facility, staged, and temporarily stored until ultimate disposal is made. Off-site transport of any wastes will comply with the new off-site rule (58 FR 49200), effective 10/22/93. The planned excavations and ultimate disposal are an integral part of the expected long-term remedial strategy for the site.

RECOMMENDATION

I recommend that you approve the Region I request. Removal work has been initiated at the site and your approval of the ceiling increase will allow this important removal action to

continue. Conditions at this site meet the NCP Section 300.415(b)(2) criteria for a removal action and the CERCLA 104(c) emergency and consistency exemption criteria. This site will be included in NPL Proposed Update #16. OERR has planned, through the SCAP process, to fund this action with \$10M from the FY94 Remedial Action budget. If any additional removal actions are necessary, they will be funded out of the FY94 \$50M set-aside for quick responses at NPL sites. Please indicate your decision by signing below.

Approved: Richard J. Guimond

Date: 9.30.93

Disapproved: _____

Date: _____

Richard J. Guimond
Assistant Surgeon General, USPHS
Acting Assistant Administrator

Attachment



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 29 1993

OFFICE OF
GENERAL COUNSEL

MEMORANDUM

SUBJECT: Exemption from \$2M Limit and Ceiling Increase
for the Raymark Sites, Stratford, Fairfield
County, Connecticut

FROM: Lee R. Tyner *Lee R. Tyner*
Attorney
Solid Waste and Emergency Response Division (LE-132S)

TO: Richard J. Guimond
Acting Assistant Administrator
Solid Waste and Emergency Response (OS-100)

THROUGH: Lisa K. Friedman *LK Friedman*
Associate General Counsel
Solid Waste and Emergency Response Division (LE-132S)

We have reviewed the above-described exemption request and do not believe that it presents any significant legal problems.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

Enforcement Sensitive Material Attached

MEMORANDUM

DATE: September 10, 1993

SUBJ: Request for a Ceiling Increase, 12-Month Exemption and \$2 Million Exemption for Removal Action at the Raymark Sites, Stratford, Fairfield County, Connecticut

FROM: Paul Keough, Acting Regional Administrator
EPA Region I *Paul Keough*

TO: Richard J. Guimond, Acting Assistant Administrator
Office of Solid Waste and Emergency Response

THRU: Henry L. Longest II, Director
Office of Emergency and Remedial Response

ATTN: Deborah V. Dietrich, Acting Director
Emergency Response Division

CERCLIS ID #: CTD983903717

SITE ID #: R4

I. PURPOSE

This memorandum amends the Action Memo approved by the Region, June 15, 1993, and requests a ceiling increase and an exemption to the 12-month and \$2 million statutory limits to conduct Superfund Accelerated Cleanup Model (SACM) early action, time-critical removal activities. Approval and authorization are hereby requested for a total project ceiling of \$20,688,200.00 to conduct time-critical removal actions at the Raymark Sites (the "Site"), in Stratford, Fairfield County, Connecticut, 06497. Depending on the results of on-going site discovery activities, additional sites may be identified which may contain waste at levels of health concern and therefore expand the scope of this action.

The activities anticipated include: implementing measures to reduce or eliminate the exposure risks associated with hazardous substances present at numerous locations; providing technical assistance to other agencies in implementing interim measures; characterizing the extent of contamination at the Site; and identifying any additional locations and characterizing the extent of contamination at such locations.



The actions proposed, if authorized, will ensure that the Agency can provide, or assist other agencies in providing, a timely response to effectively minimize and/or mitigate damage to the public health or welfare or the environment which may result from a release or threat of release of hazardous substances at the Site.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The Site is comprised of satellite locations, currently identified and yet to be identified, where wastes from Raymark Industries, Inc. (Raymark) is known or suspected to have been received and used as fill. To date, 15 areas in Stratford have been identified as having received Raymark waste. To date, approximately 60 separate properties (including those which make up the known disposal areas) have been identified as presenting some level of threat. Of the approximately 60 properties, 15 are residential, with levels of contamination which ATSDR has determined pose a health threat or imminent health threat. It is likely that as further investigations occur additional locations will be identified which may present a health threat.

EPA Region I has conducted separate response actions at the Raymark Industries, Inc. facility and at the Raybestos Memorial Field. These response actions are not included as part of this ceiling increase, 12-Month and \$2 million exemption request.

As allowed by CERCLA Section 104(d)(4), EPA will treat the noncontiguous locations, where Raymark waste has been deposited, as one site for the purpose of response as they are reasonably related on the basis of geography and the threat to public health or welfare or the environment.

1. Removal Site Evaluation

Raymark manufactured brake linings, clutch parts and other asbestos based products at its Stratford facility. The wastes consist of asbestos containing materials (ACM), including sludge and bulk asbestos waste which contained PCB's and heavy metals and semivolatiles. Raymark acknowledges that an unknown quantity of asbestos sludge and solid ACM wastes have been disposed of off-site.

As a result of finding dioxins and furans in the waste at the Raymark facility, EPA and CT DEP conducted site investigations and sampling activities at the following

seven priority locations where Raymark waste had been disposed:

Wooster Junior High School;
Short Beach Park and Recreational Area;
Housatonic Boat Club;
Spada Property;
Morgan/Francis Property;
Fourth and Fifth Avenue; and
Elm Street Lot K.

Field screening of surface samples identified asbestos, PCBs and elevated levels of lead at all 7 locations. Copies of the data packages from the field screening are attached. Based on the levels of contamination found at these locations, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a Health Advisory which indicates that the levels of contamination present an imminent public health hazard. The Health Advisory provides eight recommendations and proposed actions including dissociating "the public from the areas where exposure to Raymark waste at levels of health concern can occur".

As a result of the Health Advisory and public concern, EPA initiated a second phase of surface soil sampling in Stratford to determine the extent of contamination at the priority locations, and to evaluate abutting properties and public areas (including schools, parks and other recreational areas). To date, approximately 240 properties have been sampled.

ATSDR and the Connecticut Department of Public Health and Addiction Services (CTDPHAS) have been performing health consultations on all of the sampled properties. These health consultations are ongoing. To date, ATSDR and CTDPHAS have determined that approximately 60 properties, which includes 15 residential properties, pose a public health threat, based on field screening levels of lead, asbestos, and PCBs detected and the property use.

2. **Physical Location of Satellite Locations** (Please Refer to the June 12, 1993 Action Memorandum)

3. **Site Characteristics**

The satellite locations are coastal and upland wetlands which were filled with Raymark wastes as well as clean fill. The coastal areas are influenced by both the Housatonic River and Long Island Sound. Some impacted areas were developed as commercial properties and others as residential or recreational.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Surface screening results from the properties sampled to date indicate that elevated levels of lead, asbestos and PCBs have been found. (Please refer to the June 12, 1993 Action Memorandum for a summary of screening results from April, 1993 sampling at the high priority known locations).

Analytical results of dioxins and furans, PCBs and pesticides, total metals, and base neutral extractable organic compounds for other properties are not CLP confirmed as of the date of this memorandum.

Currently there is insufficient data available to determine the total volume of waste disposed. EPA is conducting a depth sampling program to determine the vertical extent of contamination on the known satellite locations and adjacent properties.

Residential properties which pose a public health threat are receiving a more extensive vertical evaluation to determine the volume of waste present. Indoor dust sampling is also being performed in homes on properties where Raymark waste has been found to be at levels of a health concern.

The hazardous substances identified in the surface and near surface soils could migrate off-site to presently clean areas. Contaminated dust in the air may be carried off-site by wind currents. Contaminated soils may be washed off-site by rain. Contamination may also migrate off-site through groundwater transport.

Interim actions are being performed to control access to and migration of contaminants from contaminated properties.

5. NPL status

EPA is planning to propose this site on the NPL. A nomination package has been submitted to EPA Headquarters office for review.

B. Other Actions To Date

1. Previous and Current Actions (Please refer to June 12, 1993 Action Memo)

As indicated above, EPA has conducted surface soil sampling at properties contiguous to the eight areas identified by the ATSDR Health Advisory and at schools, parks and other recreational areas in Stratford. Sediment, water and shell fish samples have been collected from the Housatonic River and Ferry Creek. In addition, as of the date of this request, a depth sampling program has been initiated and clean-up plans for the first of the properties identified as posing an imminent health threat are being developed.

CT DEP has installed an interim cap at Short Beach Park, Wooster Middle School and a partial cap at the 4th and 5th Avenue Site. The State is currently evaluating data to determine the permanent remedy at Wooster and Short Beach. CT DEP and the Town of Stratford have also met with a number of effected commercial property owners some of whom have initiated actions including restricting access to and/or capping contaminated areas.

ATSDR and CTDPHAS continue to review soil sampling data to determine the health impacts, and with the Town of Stratford, continue work on the public awareness program (e.g., public meetings to present and interpret sampling results and proposed clean-up actions), the physicians' advisory board, and, with CT DEP, meeting with property owners to discuss the analytical results and owner's responsibilities. The Town is also responding to the large number of citizen calls requesting that their properties be investigated for Raymark waste.

C. State and Local Authority Roles

1. State and local actions to date

Please refer to Section B. 1. and 2. above for a summary of State and Local efforts.

Continued collaboration with both the Town of Stratford and the State of Connecticut is anticipated.

2. Potential for continued State/local response

The State of Connecticut has committed resources including up to \$5 million to implement interim measures on the currently identified locations. CT DEP has indicated that the resources required to implement long term remedies on non-municipal locations are not

currently available. CT DEP has requested that EPA supplement state and local resources to address the Site.

EPA will work with CT DEP and the Town of Stratford to determine what institutional controls, if any, will be required to prevent the disturbance of interim measures to ensure no intrusive actions are taken in advance of implementing the proposed removal action without prior notification and approval of the EPA, CT DEP, and/or local authorities.

In addition, the Town of Stratford Conservation Division of the Department of Public Works has agreed to perform periodic inspections to ensure that the integrity of Site security measures already in place are maintained.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions presently exist at the Site which, if not addressed by implementing the response action documented in this Action Memorandum, may lead to an imminent and substantial endangerment to the public health or welfare or the environment.

A. Threats to Public Health or Welfare

Based on the results of surface samples collected in April, ATSDR issued a Public Health Advisory on May 26, 1993. ATSDR concluded that there is an "imminent public health hazard" associated with exposure to Raymark waste. ATSDR also indicated that there is an urgent health hazard to the public associated with the 7 locations identified above and the residential properties adjacent to the Raybestos Memorial Field.

The potential exists for exposure to hazardous substances by nearby populations if the Site remains unaddressed. Currently, waste has been identified in areas such as adjacent to public schools, recreational fields, residential areas, and commercial areas. The current and future threat at locations where Raymark waste has been used as fill is posed by the presence of metal, asbestos and organic contamination in surface and near surface soils. The potential exists for both on-and off-site exposure to the local population.

As indicated above, the primary routes of exposure are through direct contact with contaminated soils, followed by ingestion, and the inhalation of airborne dusts.

ATSDR and CTDPHAS continue to review the results of the analysis of soil samples collected. To date, results indicate that levels of asbestos, PCBs and levels of lead, significantly greater than background, are present.

Based on 1988 census information, within one-half mile of the Raymark facility there are approximately 2600 people residing and, within one quarter of a mile, there are approximately 500. The population at risk surrounding all satellite locations is far greater although not quantifiable as yet.

Quantities and Types of Substances Present

The types of substances currently identified as characteristic components of Raymark waste and present at known satellite disposal locations include PCB's, asbestos (present in friable form), lead, and dioxins (found at the Raymark facility).

Insufficient data exists to provide an accurate estimate of the volume of hazardous substances and contaminated soil present or the quantity of hazardous substances that were disposed of at the properties identified as contaminated. Ongoing depth sampling is designed to provide data for estimating the total waste volume.

As resources permit, EPA will continue to investigate other locations where waste may have been disposed. Based on currently available information, it is possible that Raymark disposed of waste off-site for more than 50 years, from approximately 1920 until 1978. During most of that time, the material was used as fill.

IV. ENDANGERMENT DETERMINATION

The ATSDR and CTDPHAS have determined that the concentrations of contaminants present on the seven satellite locations pose an imminent public health hazard. In addition, the health agencies have been performing health consultations on all individual properties recently sampled and has categorized the risk in terms of these categories 1) Imminent Health Hazard, 2) Health Hazard, 3) Potential Health Hazard and 4) No Health Hazard.

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this Action Memorandum, will continue to present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

A. Emergency Exemption

1. There is an immediate risk to public health or welfare or the environment.

ATSDR has been performing health consultations for individual residential properties based on the sampling data results and the likelihood of human exposure. ATSDR has classified seven residential properties as imminent health threats requiring immediate response actions, due to the elevated levels of lead, asbestos, and in some cases, PCBs, in surface and near surface soils. An additional eight properties have been classified as posing a health threat that should be addressed through response actions. The highest levels detected were asbestos at 75% chrysotile, lead at 14,300 ppm, and PCBs at 74 ppm. Human exposure to elevated levels of these contaminants may cause adverse health effects including increased cancer risks, skin irritation, and possibly brain and kidney damage. Residents whose property has been determined to be contaminated could come into direct contact with the contamination or could be exposed through ingestion and/or inhalation.

2. Continued response actions are immediately required to prevent, limit, or mitigate an emergency.

The property specific ATSDR health consultations recommended that immediate response actions be taken to mitigate the threats posed by the contamination. The response actions described in this action memo are necessary to quickly eliminate human exposure to the elevated concentrations of asbestos, lead, and PCBs. If response actions are not taken, residents will continue to be exposed to elevated levels of contamination.

3. Assistance will not otherwise be provided on a timely basis.

While the CT DEP has taken the lead in addressing most of the locations identified in the original ATSDR Health Advisory, they do not have the resources to implement the necessary actions at the additional properties identified as

posing imminent health threats and health threats. The CT DEP has requested that EPA supplement State and local resources to address the threats posed by the Site.

B. Consistency Exemption

1. Continued response actions are otherwise appropriate and consistent with the remedial action to be taken.

(a) Consistency: The Site is not currently on the NPL; however, the Region has submitted a nomination package based on the ATSDR Health Advisory.

To the extent practical, considering the threat posed to public health and welfare, the response actions implemented will be consistent with the remedial action to be taken. Where excavation is determined to be the appropriate action, the excavation, backfilling, and regrading will be designed to implement long-term clean-up goals. The excavations to be performed under removal authority are an integral part of the expected long-term remedial strategy.

For lower priority properties, interim capping may be the appropriate response action. Should a waste in place solution be chosen and include capping, the interim measure can be used as a base layer for the permanent cap.

Depending on the chemical composition of the waste and volume of material present, excavation and/or capping are likely to be the preferred long term alternatives.

(b) Appropriateness: Use of the consistency waiver exemption is appropriate when the action will 1) avoid a foreseeable threat; or 2) prevent further migration of contaminants; or 3) use an alternative to land disposal; or 4) comply with the off-site policy. The proposed project meets two of these criteria. These justifications are discussed below.

1. To Avoid A Foreseeable Threat. Unless the exemption to the statutory time and dollar limits are approved, foreseeable threats to public health will remain unabated. ATSDR has determined that there is an imminent health hazard associated with exposure to Raymark waste. If the proposed actions are not implemented, people may continue to be exposed to Raymark wastes.

2. To Prevent Further Migration of Contaminants. An exemption from the statutory limits is needed

in order to prevent further migration of contaminants. Contaminated surface and near surface soils could migrate from the disposal locations and contaminate additional areas including residential properties (indoors and outdoors). Routes of migration include airborne migration and surface water runoff. When excavation of waste is the selected alternative, it will mitigate the source of potential ground water contamination. Implementation of the proposed removal action will prevent further migration of the contaminants.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Description of proposed action(s)

EPA is participating in a collaborative effort with the Town of Stratford, the State of Connecticut DEP and CTPHAS, and ATSDR to address health threats posed by the presence of surficial contamination at the Site.

Proposed activities by EPA include:

- A) Designing and implementing measures to abate threats at locations identified during the investigation and discovery activities determined to require response actions.

ATSDR and CTDPHAS are categorizing health implications of contaminants at individual properties into the four following classifications based on the data results and the likelihood and estimated frequency of human exposure (presence of children, contamination in high traffic areas):

Imminent Health Threat - There is a strong likelihood that some individuals will be exposed to contaminants at levels that will cause harmful effects.

Health Threat - There is a likelihood that some individuals will be exposed to contaminants at levels that will cause harmful effects.

Possible Health Threat - There is a possibility some individuals will be exposed to contaminants either now or in the future at levels that may cause harmful effects.

No Health Threat - No one is likely to experience harmful effects because 1) no one is exposed, or 2) contaminant levels are so low that harmful effects are not likely.

On properties where contaminants were found at the surface and on properties adjacent to areas which received Raymark waste, depth sampling is being conducted to further characterize the extent (if any) of contamination. Depth sampling activities are on going.

EPA is prioritizing response actions based on 1) the use of the property (i.e., residential properties have the highest clean-up priority) and 2) ATSDR classification of threat. Actions may include excavating and disposing contaminated material, backfilling, and regrading; capping waste material to eliminate exposure; and/or controlling access. Properties classified as Imminent Health Threats are the highest priority for EPA actions.

In addition, as indicated above, in the health consultation ATSDR also recommended that EPA perform indoor sampling at residential properties. In consultation with ATSDR, EPA has developed and implemented an indoor dust sampling plan to address those residential properties identified as Imminent Health Threats or Health Threats during the first phase of surface sampling. Once data is available, results will be evaluated to determine whether actions are necessary to cease exposures in homes.

For properties determined to require excavation, the excavation, backfilling, and regrading will be designed to the extent possible to meet long-term cleanup goals. The Regional Decision Team (RDT) has determined that target cleanup levels are to be established in consultation with ATSDR and EPA health risk assessors which will ensure consistency with the permanent remedy.

Temporary staging and sampling of excavated material at a secure location may be required while final remedy is arranged. Due to the substantial projected costs, and desire for consistency with the final remedy selected at Raymark, EPA is exploring various disposal options for the excavated waste including consolidating waste at the Raymark facility pending remedy selection.

- B) Provide technical assistance to CT DEP as requested in the design and construction of interim measures at

State lead sites.

- C) Provide technical assistance to the CT DEP and others as requested to collect and analyze sediment and marine organism samples from water bodies potentially effected by Raymark waste as necessary to evaluate the potential health threat posed by consumption of seafood.
- D) As resources permit, investigate other locations suspected to have received Raymark waste.
- E) Provide technical assistance to the Town and the CT DEP in the design and oversight of PRP lead clean-up actions.

2. Discussion of how the removal action contributes to the performance of remedial activities at the Site

As indicated above, EPA intends to propose evaluating the Site for NPL listing. The actions proposed in this Action Memorandum are designed to mitigate the threat to human health or welfare and will, to the extent practicable, contribute and where practicable, be equivalent to the performance of any long term remedial actions.

The excavations will be conducted to mitigate human health threats goals and are an integral part of the expected long-term remedial strategy for the Site. The design of any interim caps will contribute to the efficient performance of any long term remedies. If the selected long term remedy precludes a waste in place solution, the interim cap can be stripped and used as clean fill at other locations that are to be capped. If the selected long term remedy for a specific location is permanent capping, the interim cap can be utilized as a base.

2. Applicable or Relevant and Appropriate Requirements (ARARs)

Based on the scope of the removal action the following ARARs were determined to be practicable:

- a. Clean Air Act regulations at 40 C.F.R. Part 61, Subpart M (National Emissions Standards for Hazardous Air Pollutants)

These provisions are applicable during the excavation, consolidation, and capping of asbestos contaminated materials.

§ 61.150 Standards for manufacturing, fabricating, demolition, renovation, and spraying operations

§ 61.151 (except 61.151(d)) Standard for inactive disposal sites for asbestos mills and manufacturing and fabricating operations

§ 61.154(a)-(d) Standard for active waste disposal sites

b. Regulations regarding the Storage, Treatment, and Disposal of Hazardous Wastes

Standards Applicable to Generators of Hazardous Waste 40 CFR Part 262, Subpart B: Manifesting

- 262.20 General Requirements for manifesting
- 262.21 Acquisition of manifests
- 262.22 Number of copies of manifests
- 262.23 Use of the manifest

40 CFR Part 262, Subpart C: Pre-Transport Requirements

- 262.30 Packaging
- 262.31 Labeling
- 262.32 Marking

Standards For Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities 40 CFR 264, Subpart I: Use and Management of Containers

- 264.171 Condition of containers
- 264.172 Compatibility of waste with containers
- 264.173 Management of containers
- 264.174 Inspections of containers
- 264.175 Containment
- 264.177 Special requirements for incompatible wastes
- 264.178 Closure

Land Disposal Restrictions 40 CFR Part 268, Subpart C: Prohibitions on Land Disposal

- 268.32 Waste specific prohibitions-California list wastes
- 268.35 Waste specific prohibitions-Third third wastes

40 CFR Part 268, Subpart D: Treatment Standards

- 268.40 Applicability of treatment standards
- 268.41 Treatment standards expressed as concentrations in waste extract
- 268.42 Treatment standards expressed as specific technologies

- 268.43 Treatment standards expressed as waste concentrations

40 CFR Part 268, Subpart E: Prohibitions on Storage

- 268.50 Prohibitions on storage of restricted wastes.

c. Clean Water Act Section 404 Program Regulations, 40 C.F.R. §§ 230.10 and 230.70-77; 33 C.F.R. § 330.6.

d. Regulations regarding PCBs:

40 CFR 761.65(b)-(c): TSCA requirements for storage of PCBs

e. The following are To be Considered (TBC) for the site:

40 CFR 761.120: PCB Spill Cleanup Policy (except for reporting and record-keeping requirements)

Guidance on Remedial Actions for Superfund Sites with PCB Contamination (EPA/540/G-90/007 Aug. 1990)

Draft Interim Guidance on Establishing Soil Lead Cleanup Levels of Superfund Sites and Update (OSWER Dir. No. 9355.4-02 (June 13, 1989) and Update (August 29, 1991)

Additional ARARs including wetland and Coastal Zone Management requirements are being evaluated with the assistance of the Army Corps of Engineers and CT DEP.

Additional ARARs have been requested from the State and may be identified as the removal action progresses.

3. Project schedule

The first phase of EPA's surface soil survey has been completed. Data has been reviewed by ATSDR and CTDPHAS and health determinations are being made. That information is being released to the property owners and the public and is the basis for EPA response actions to be initiated during the month of September. As indicated above, interim actions are currently being implemented to control access to, limit contact with and mitigate surficial migration of contaminants from affected properties.

As of the date of this memorandum, residential properties where an imminent health threat or health threat was identified and EPA received access, indoor dust sampling has been performed. The results are scheduled to be available within approximately two weeks. These results will be evaluated in consultation with ATSDR and considered when developing response actions.

In August, EPA initiated the depth sampling program which is currently projected to be completed in October. This information is being used to supplement data developed during the surficial sampling events, look at possible groundwater impacts of the waste, and aid in the development of clean-up plans.

Another round of surficial sampling is anticipated as resources become available to further investigate/characterize the lateral extent of contamination present. This work is being prioritized in areas where response actions are currently planned.

Further site discovery is currently a lower priority. While EPA recognizes that there may be other areas where waste was disposed, resources dedicated to the project are evaluating and responding to findings from the earlier sampling events. It is likely the site discovery will begin again next spring.

B. Estimated Costs

Extramural Costs:

Proposed Ceiling

Regional Allowance Costs

ERCS Costs	\$11,000,000.00
Army Corps of Engineers (ACOE)	
Design/Oversight Costs	\$ 400,000.00
Temporary Relocation Costs	\$ 100,000.00
United States Coast Guard (USCG)	
Logistical/Technical	
Support Costs	\$ 78,200.00
Contingency Costs	\$ 2,300,000.00
(20% of Regional Allowance Costs)	

Other Extramural Costs Not Funded From the Regional Allowance

TAT Costs (including multiplier)	\$ 2,000,000.00
Contract Lab Program Analytical	\$ 750,000.00
ERT REAC and TAT	\$ 600,000.00
EPIC	\$ 100,000.00
ESAT	\$ 200,000.00
TES	\$ 25,000.00
Contingency Costs	\$ 735,000.00
(20% of Non-Regional Allowance Costs)	
Subtotal, Extramural Costs	\$18,288,200.00

Intramural Costs:

Intramural (incl. indirect cost)	\$ 2,000,000.00
Contingency Costs	\$ 400,000.00
(20% of Non-Regional Allowance Costs)	
Subtotal, Intramural Costs	\$ 2,400,000.00

Total Project Cost:

Subtotal Intramural and Extramural Costs	\$17,253,200.00
20% Project Contingency	\$ 3,435,000.00
TOTAL REMOVAL PROJECT CEILING	\$20,688,200.00

**VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR
NOT TAKEN**

Delayed action will result in a continuing risk to the public health. Failure to implement the removal actions may result in further exposure to levels of contaminants which may pose an imminent health threat.

VIII. OUTSTANDING POLICY ISSUES

N/A

IX. ENFORCEMENT

Please refer to Appendix B.

X. RECOMMENDATION

This decision represents the selected removal action for the Raymark Sites, Stratford, CT, developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on documents that will be included in the Administrative Record for the Site.

Conditions at the Raymark Sites meet the NCP section 300.415(b)(2) criteria for a removal and the CERCLA section 104(c) exemption from the \$2 million limitation criteria. The NCP Section 300.415 criteria for a removal action are:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;" [300.415(b)(2)(i)];

"High level of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" [300.415(b)(2)(iv)];

"Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;" [300.415(b)(2)(v)].

I recommend that you approve the ceiling increase and \$2 million exemption. The total project ceiling, if approved, will be \$20,688,200, of which an estimated \$13,900,000 is from the Regional removal allowance and is for cleanup contractor costs and interagency logistical, technical, and design support. You may indicate your approval or disapproval by signing below.

Approved: _____

Date: 9.30.83

Disapproved: _____

Date: _____

Richard J. Guimond
Assistant Surgeon General, USPHS
Acting Assistant Administrator
Office of Solid Waste and Emergency Response

Appendix A

The potential impacts of asbestos exposure are chronic in nature and may not manifest themselves for a number of years after initial exposure. Diseases that are linked to asbestos include asbestosis, a chronic lung inflammation, and a variety of cancers which vary in their prognoses. The most deadly cancer which is linked to inhalation of asbestos is mesothelioma, a disease which results in the destruction of the mesothelium, the lining surrounding various abdominal organs. Mesothelioma is 100% fatal within a period of one to two years after diagnosis.

The following excerpt from a report published by the Agency for Toxic Substance and Disease Registry (ATSDR) of the U.S. Public Health Service, describes the potential health impacts of PCBs:

"Some PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects and cancer. Therefore, it is prudent to consider that there may be health hazards for humans. Human studies to date show that irritations, such as acne like lesions and rashes, can occur in PCB-exposed workers. Other studies of people with occupational exposure suggest that PCBs might cause liver cancer. Reproductive and developmental effects may also be related to occupational exposure and eating of contaminated fish. While the role of PCBs in producing cancer, reproductive, and developmental effects cannot be clearly delineated, the suggestive evidence provides an additional basis for public health concern about humans who may be exposed to PCBs."

The following excerpt from a report published by the Agency for Toxic Substance and Disease Registry (ATSDR) of the U.S. Public Health Service, describes the

¹ Toxicological Profile for Selected PCBs (Aroclor-1260, -1254, -1248, -1242, -1232, -1016), published by the Agency for Toxic Substance and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1989, Section 1, p 2.

potential health impacts of lead:

"Exposure to lead is especially dangerous for unborn children because their bodies can be harmed while they are being formed. If a pregnant woman is exposed to lead, it can be carried to the unborn child and cause premature birth, low birth weight, or even abortion. Young children are at risk because they swallow lead when they put toys or objects soiled with lead-containing dirt in their mouths. More of the lead swallowed by children enters their bodies, and they are more sensitive to its effects. For infants, or young children, lead exposure has been shown to decrease intelligence (IQ) scores, slow their growth, and cause hearing problems. These effects can last as children get older and interfere with successful performance in school.

... Because laboratory animals fed lead in their diet throughout their lives have developed tumors, lead should be thought of as a probable cancer-causing substance in humans.

Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Lead exposure may increase blood pressure in middle-aged men...Lead may affect [a man's] sperm or damage other parts of the male reproductive system."²

² Toxicological Profile for Lead, published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June, 1990, Section 1, pp 2-3.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 9 1993

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Confirmation of Verbal Authorization for \$2M Exemption and Ceiling Increase at the Stratford Sites, Stratford, Connecticut

FROM: Richard J. Guimond
Assistant Surgeon General, USPHS
Acting Assistant Administrator

TO: Paul Keough
Acting Regional Administrator
Region I

The purpose of this memorandum is to document my verbal approval of a \$2M exemption and a ceiling increase up to \$4M for continued removal actions at the Stratford sites, Stratford, CT. Region I submitted an action memorandum requesting a \$2M exemption and a total project ceiling increase to \$5,050,000 on July 21, 1993. Since that time however, the Region has received additional sampling data and has determined that excavating contaminated material may be the most cost-effective feasible action. As a result, we have been informed that the estimated total project ceiling for completing the removal action is likely to exceed \$10 million dollars.

Region I should revise the \$2M exemption and ceiling increase action memorandum to clearly document the actions to be taken during the excavation project. In addition, the associated cost estimate should be revised to provide a sound administrative record for this large-scale removal action. Verbal approval of the exemption to the \$2M limit and a project ceiling increase to \$4M will allow Region I to continue removal activities while working with the Headquarters Office of Emergency and Remedial Response (OERR) to develop a detailed response strategy and final cost estimate. The \$2M exemption is justified because the site meets the CERCLA section 104(c) consistency exemption criteria. The site is expected to be proposed to the National Priorities List (NPL) within a few weeks. The excavation to be performed under removal authority is consistent with the remedial action to be taken as it is an integral part of the expected long-term remedial strategy. The proposed removal action is also appropriate because it will avoid a foreseeable threat and prevent further migration of contaminants.

I have been informed that Region I has sufficient resources to continue working at the site through the end of this fiscal year. We are planning and committing to fund this removal action to its completion in FY94. The Headquarters Emergency Response Division (ERD) is prepared to provide assistance to Region I for expediting finalization and approval of the revised action memorandum. If you have any questions regarding this memorandum, please call Deborah Dietrich, Acting Director of ERD on (703) 603-8760.

Enforcement Sensitive Material Attached

MEMORANDUM

DATE: June 12, 1993

SUBJ: Request for a Removal Action at the Stratford Sites,
Stratford, Fairfield County, Connecticut.

FROM: *fa* Arthur K. Wing, Senior On-Scene Coordinator *Dpey*
Site Evaluation and Response Section II,
Emergency Planning and Response Branch

ATTN: Deborah Dietrich, Acting Director
Emergency Response Division

TO: Richard Guimond, Acting Assistant Administrator,
Office of Solid Waste and Emergency Response

THRU: *Paul Keough* Paul Keough, Acting Regional Administrator

CERCLIS ID #: N/A¹

SITE ID #: R4

I. PURPOSE

This memorandum combines both an initial removal and statutory \$2 million dollar exemption request for SACM early action time-critical removal activities.

Approval and authorization are hereby requested for \$5,040,000.00 to commence time-critical removal actions at the Stratford, Connecticut Sites (the "Sites"), in Stratford, Fairfield County, Connecticut, 06497.

The activities anticipated include: implementing measures to reduce or eliminate the exposure risks associated with the waste located at or near the surface of the Sites; providing technical assistance to other agencies in implementing interim measures; characterizing the extent of contamination at the 15 known sites; and identifying any additional sites and characterizing the extent of contamination at such sites.

¹ There are multiple sites associated with this project some of which are not currently in the CERCLIS database.

The actions proposed, if authorized, will ensure that the Agency can provide or assist other agencies in providing a timely response to effectively minimize and/or mitigate damage to the public health or welfare or the environment which may result from a release or threat of release of hazardous substances at the Sites.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The Sites are satellite locations where Raymark waste is known to have been received and used as fill. To date, 15 satellite Sites have been identified as having received Raymark waste. Local town officials have indicated that many more Sites may be present.

1. Removal Site Evaluation

Raymark Industries, Inc. manufactured brake linings, clutch parts and other asbestos based products at its Stratford facility. The wastes consisted of asbestos containing materials (ACM) streams including sludge and bulk asbestos waste which contained PCB's and heavy metals. Raymark acknowledges that an unknown quantity of asbestos sludge and solid ACM wastes have been disposed of off-site.

On March 31, 1987, EPA issued a RCRA §3013 Order to Raymark Industries, Inc. to conduct a site assessment at the Raymark facility.

In January 1989, EPA conducted a series of waste disposal site inspections in Stratford at the request of the Town's Environmental Conservation Administrator. Many areas of disposal identified by the Town appeared to have been previously capped with soil and seeded; however, as a result of erosion of the soil and possibly as a result of the frost action, some material had resurfaced. The inspections also revealed that access was unrestricted and in some cases the properties, such as the Raybestos Memorial Ball Field, were used as public recreation areas for the town. Soil samples were collected and analyzed for asbestos.

In February, 1990, EPA issued an CERCLA §106 Order to Daley Development Corporation, owner of the Raybestos Memorial Ball Field. The order required a site assessment/characterization and implementation of an approved remedy. The PRP conducted site assessment and preliminary cap design work; however, was unwilling to install cap which resulted in an EPA fund-lead action being initiated June 1, 1992.

On September 10, 1992, the Regional Administrator signed the Action Memorandum for the Raymark Industries, Inc., Site. On September 11, 1992, as amended in October 1992, EPA issued a CERCLA §106 Removal Order to Raymark Industries. Cleanup of the Raymark facility Site was initiated on December 4, 1992.

In October and November, 1992, EPA conducted further soil and sediment sampling around the perimeter of the Raymark facility and Raybestos Memorial Field. This data was required to develop the National Priorities List HRS (Hazard Ranking System) ranking package. Some residential samples were collected as part of that initiative.

In February 1993, the On Scene Coordinator was informed that dioxins/furans had been identified in soil borings collected as part of the on going work pursuant to the §3013 Order at the Raymark facility. The highest value reported was approximately 7.4 ppb 2378-TCDD toxicity equivalency.

The elevated dioxins and furans appeared to be in waste buried under pavement. An ATSDR consultation was requested. Based on the Site conditions, ATSDR did not consider the levels present to be a health threat. However, the levels reported did exceed levels which EPA, in coordination with ATSDR identified as safe for residential exposure.

EPA notified the CT DEP and Town of Stratford of the findings and EPA, the State DEP and Town initiated plans for a coordinated investigation of known satellite disposal areas in Stratford. A total of 15 locations were identified and prioritized for investigation. Seven areas were targeted by the State of Connecticut and the Town of Stratford with input from ATSDR and CT Department of Health Services as highest priority sampling locations due to the potential for direct contact based on the proximity of residential populations and potential extent of surficial contamination.

On April 12, 1993, EPA and CT DEP initiated site investigations and sampling activities at the following seven priority sites:

Wooster Junior High School,
Short Beach Park and Recreational Area,
Housatonic Boat Club,
Spada Property,
Morgan/Francis Property,
Fourth and Fifth Avenue, and
Elm Street Lot K.

Sediment and marine organism sampling in Ferry Creek and the Housatonic River is tentatively scheduled for mid June.

Field screening of surface samples identified asbestos, PCBs and elevated levels of lead at all 7 sites. Copies of the data packages from the field screening are attached. Based on the levels of contamination found at the sites, ATSDR issued a Health Advisory (attached) which indicated that the levels of contamination represented an imminent public health hazard. The Health Advisory provided eight recommendations and proposed actions including dissociating "the public from the areas where exposure to Raymark waste at levels of health concern can occur".

In late April 1993, the Superfund Support Section reported that some residential soil samples collected in late 1992 had high levels of lead. This data was also provided to ATSDR and the Town of Stratford.

2. Physical Location of Satellite Sites

The Wooster Junior High School site is located on Lincoln Avenue in Stratford and is situated in a populated residential area. The site is identified on tax maps D-10 and E-10. It is bounded to the south by Lincoln Street, to the west by Nichols Avenue and an unnamed brook, to the north by a wooded lot and an unnamed pond, and to the east by Freeman Avenue.

The topography of the site is primarily flat with the school building and parking areas slightly elevated above the remainder of the property. To the west and north of the school are the sports fields and outdoor recreation areas.

The primary areas of concern at the school are the recreation areas and sports fields. Visible signs of Raymark waste material were found at the surface on the northern sports fields. To prevent access to this waste, the Stratford DPW erected a hazard fence and warning signs around the contaminated area. Sampling and analysis of surface soils collected from the sports fields indicated elevated levels of lead, PCBs and asbestos on the northern sports fields (see Section II. A. 4. for max. concentrations found). Data from samples collected on the south-western fields indicated background levels of lead and no PCBs or asbestos were detected.

Perimeter air samples were collected and not detectable levels of asbestos or lead were found. Aggressive air samples for asbestos were also collected inside the school and no detectable levels were observed.

At the present time, the Town of Stratford has closed the northern sports fields and has erected a fence between the northern and south-western fields to limit access to the northern fields. The southern fields have been reopened for activities.

Short Beach Park is located on Dorne Drive in Stratford, and is situated near a residential area. The site is identified on tax map G-18 and is owned by the Town of Stratford. The site is bounded to the south and west by Short Beach Road, to the north by Dorne Drive and the Dorne Drive Landfill, and to the east by Short Beach and Long Island Sound.

The site functions as a recreational area for the Town of Stratford and consists of baseball, softball and soccer fields, a municipal golf course, and Short Beach. The topography of the site is primarily flat, with slight elevations and depressions on the municipal golf course property. The golf course property also contains four small unnamed ponds which collect runoff from the area.

The site was originally a portion of the Dorne Drive Landfill which was a known repository of Raymark waste. In the late 1980s, the property was levelled, capped, and converted into the park. Due to the popularity of the area for recreational use, the Stratford Health Director requested that screening of the property be included as part of the April 1993 site investigations.

Analysis of surface soil samples collected during the site investigation activities indicated slightly elevated levels of lead, and levels of PCBs and asbestos in discrete areas of the property (see Section II. A. 4. for max. concentrations found). The bulk of the contamination was found on the northern portion of the site along Dorne Drive.

During assessment activities, EPA discovered piles of dirt left beside a recently installed perimeter fence (installed by the Town) due to posts installation on the little league baseball field located on the southeast portion of the property. Sampling of the soil estimated to be from depths ranging from 0 to 2 feet revealed elevated levels of asbestos. Subsequent sampling of the playing field surface by CT DEP did not indicate the presence of contamination.

At the present time, the Town of Stratford has closed the sections of the park along Dorne Drive and the little league baseball field where contamination was found. Warning signs indicating the existence of a potential health hazard have been posted in these areas and access to the closed areas has been limited by a rope blockade. The Town has contracted with a cleanup contractor to remove the soil

piles from the little league field and that work is ongoing. The CT DEP has initiated interim cover placement.

The Housatonic Boat Club is located on Shore Road in Stratford. The site is identified on tax map F-15. The site is bounded to the east and south by tidal marshlands, and the Housatonic River, to the west by Shore Road and residential areas, and to the north by Shore Road and park land adjacent to the Shakespeare Theater owned by the State of Connecticut.

The site consists of a privately owned boat club and a boat storage area. The site is elevated approximately six feet above the tidal marshlands and the Housatonic River, with a slope from Shore Road to the tidal marsh. Two buildings belonging to the boat club and a gravel covered parking area are present on the northern portion of the property. The areas directly west of the Housatonic River and the tidal marshlands are known to have been filled with Raymark waste to raise the roadway and boat club property above the water level of the river.

Analysis of surface soil samples collected during the site investigation indicated the presence of high levels of lead, and levels of PCBs and asbestos (see Section II. A. 4. for max. concentrations found). Levels of contamination were detected in areas with unlimited access.

At the present time, the Town of Stratford has closed Shore Road to public use. Signs have been erected on the portions of Shore Road abutting the site to warn of the existence of a potential health threat. The Town is in the process of erecting a gate across the western section of Shore Road to prevent unauthorized access to the site. The boat club will continue operations.

The Elm Street, Lot K site is a residential property. The site is bordered to the south by a drainage swale flowing to the Housatonic River, to the west by Elm Street, to the north by residential properties, and to the east by the Stratford Water Pollution Control Plant. The topography of the property is flat.

Verbal information from the owner of the property indicates that the southwestern portions of the property were filled using wastes generated at the Raymark facility. The southwestern area has distinct areas of stressed vegetation.

Analysis of surface soil samples collected during the site investigation activities indicates the presence of high levels of lead and levels of PCBs and asbestos (see Section II. A. 4. for max. concentrations found).

Three sides of the property are fenced and the fourth side of the property is bordered by the drainage swale, which serve to limit access to the property. No actions have yet been initiated at the Site.

The Fourth and Fifth Avenue Site is an undeveloped parcel of property located in a residential subdivision the end of a Fourth Avenue in Stratford. The properties are identified on tax map E20, lot numbers 98 through 103 and 125 through 130. The site is bordered in all directions by residential properties. The southern portion of the site consists of a pond which is subjected to tidal influence from Long Island Sound via an underground pipeline. Although actions have been taken by the Town and fill has been transported on to the site, Raymark waste remains exposed on a portion of the property.

Analysis of surface soil samples collected during the site investigation indicated the presence of high levels of lead and levels of PCBs and asbestos (see Section II. A. 4. for max. concentrations found).

Access to the property is unrestricted. No actions have been initiated to date at the site to restrict access.

The Morgan/Francis Property Site is located at 576 East Broadway Street in Stratford in a commercial/residential area. The site is identified on tax map F13. The site is bordered to the east by East Broadway Street and Ferry Creek, to the south and west by residential properties on Blakeman Place, and to the north by Interstate Route 95. The site is a known repository of Raymark waste. Raymark waste was visible on the surface in some areas. According to the Town, a substantial amount of fill has been brought on to the Site and a substantial portion of the site is covered. In particular, the parking lot adjacent to the Precision Tool Company on Broad Street appears to have Raymark waste at the surface. The CT DEP and the Town have also observed areas adjacent to the residential properties where it appears that cover materials have not been placed.

Analysis of the site investigation surface soil samples, collected from areas not covered, indicate the presence of high levels of lead and levels of PCBs and asbestos (see Section II. A. 4. for max. concentrations found).

Access to the site is essentially unrestricted. Portions of the property have been posted by the owner; To date, no actions to limit access to the property have been initiated.

The Spada Property Site is located on the eastern side of Ferry Boulevard in Stratford. The site is identified on tax map F15. The site is bordered to the south by Broad Street, to the west by Ferry Boulevard, to the north by residential properties along Willow Avenue, and to the east by residential properties on Housatonic Avenue and the Housatonic River. Ferry Creek transects the property.

The site has been subdivided and consists of a series of active commercial properties on the western side of Ferry Creek including car dealerships, retail stores, and a marina. The eastern side of Ferry Creek is undeveloped.

Analysis of surface soil samples collected during the site investigation activities indicated the presence of high levels of lead and levels of PCBs and asbestos (see Section II. A. 4. for max. concentrations found).

Access to the site is unrestricted. Much of the filled area has been built on or paved however at the property boundaries (e.g., between commercial subdivisions and along Ferry Creek and Ferry Boulevard) there are exposed areas. There are no restrictions on access to the commercial properties. The Town of Stratford and CT DEP have met with commercial property owners and some temporary measures to limit access to exposed areas have been initiated by one of the commercial property owners.

3. Site Characteristics

Historically, the Sites are coastal and upland wetlands which were filled with Raymark and other wastes. Some areas were developed as commercial properties and others as residential or recreational.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The following is a list of the highest concentrations of the hazardous substances, as defined by Section 101(14) of CERCLA, identified during the field screening for the 7 sites sampled to date. The contaminant levels represent maximum concentrations identified and are expressed in parts per million (ppm) except for asbestos which is expressed as percent by volume of the sample:

Wooster Junior High School:

PCBs (Aroclor 1268):	44
Lead	1797
Asbestos	15%

Short Beach Park and Recreational Area,

PCBs (Sum of Aroclors 1254, 1260 and 1268):	5
Lead	810
Asbestos	15%

Housatonic Boat Club,

PCBs (Aroclor 1268):	108
Lead	>10,000
Asbestos	90%

Spada Property,

PCBs (Aroclor 1268):	35
Lead	>10,000
Asbestos	90%

Morgan/Francis Property,

PCBs (Aroclor 1268):	44
Lead	>10,000
Asbestos	90%

Fourth and Fifth Avenue, and

PCBs (Aroclor 1254):	15
Lead	8,400
Asbestos	80%

Elm Street Lot K.

PCBs (Aroclor 1268):	55
Lead	>10,000
Asbestos	90%

There is insufficient data available to provide an exact estimate of the quantity of material disposed of at these 7 sites.

Results of samples sent for confirmatory analysis (dioxins and furans, PCBs and pesticides, total metals, and base neutral extractable organic compounds) are not available as of the date of this memorandum. EPA anticipates that the results will be available by early July.

The hazardous substances identified in the surface and near surface soils could migrate off-site to presently clean areas. Contaminated dust in the air may be carried off-site by wind currents. Contaminated soils may be washed off-site by rain. Contamination may also migrate off-site through groundwater transport. The groundwater remediation, however, is beyond the scope of the removal/SACM actions.

Currently, there are very limited measures to control migration of contaminants from the Sites onto adjacent residential and recreation properties.

5. NPL status

The Sites are not listed on the National Priorities List (NPL). However, they are currently being evaluated along with the Raymark facility by EPA Region I for expedited listing as a result of the ATSDR Health Advisory.

6. Maps, pictures, and other graphic representations

- a. Site Analysis Raymark Industries Stratford, Connecticut Volumes 1 and 2, US EPA Office of Research and Development, Environmental Monitoring Systems Laboratory, Las Vegas, NV, document number TS-PIC-86082, April 1987.
- b. Preliminary Site Assessment for the Stratford Asbestos Sites Stratford, Connecticut, R. F. Weston, Technical Assistance Team, Burlington, MA, February 1989, contains a copy of the tax maps for the area and a series of color photographs of the Site;
- c. A copy of a section of a Stratford Street map and a copy of a section of the Milford, Connecticut USGS Quadrangle (7.5 minute series); and
- d. Sample Data Reports for Wooster Middle School, Short Beach Park, Housatonic Boat Club (Shore Road), Spada property, Morgan Francis property, Elm Street Lot K, and Fourth and Fifth Avenue sites.

B. Other Actions To Date

1. Previous actions

Cleanup actions have been conducted at several of the 7 satellite sites by property owners, the town, and the CT DEP. Actions taken included removing and/or covering exposed wastes.

2. Current actions

As a result of the discovery of dioxins and furans at the Raymark facility, EPA and CT DEP with assistance from the Town of Stratford and the Connecticut Department of Health Services initiated a sampling program to characterize the surficial contamination on satellite sites. Fifteen locations were identified by the Town and CT DEP. Seven were targeted as high priority based on suspected extent of surficial contamination and proximity to residential populations.

On April 12, 1993, sampling and field screening were initiated at the sites. Approximately 500 samples were collected and screened and 50 were submitted for confirmatory analysis. As indicated above, the confirmatory data is not currently available.

As a result of the high levels of contamination observed at the seven sites, CT DEP has obtained funding to implement interim measures to restrict access to the sites and minimize the potential for surficial migration of contamination. CT DEP has requested technical assistance from EPA as well as funding of all necessary additional actions to mitigate or eliminate risk.

Actions initiated by the Town of Stratford include restricting access to contaminated municipal properties, implementing a public awareness program (e.g., public meetings to present analytical results and proposed clean-up actions), setting up a physicians advisory board, and with CT DEP meeting with property owners to discuss the analytical site results and owner's responsibilities.

Surface water, sediment and bivalve sampling from Ferry Creek and the Housatonic River are currently being scheduled.

C. State and Local Authority Roles

1. State and local actions to date

Please refer to Section B. 1. and 2. above for a summary of State and Local efforts.

Continued collaboration with both the Town of Stratford and the State of Connecticut is anticipated.

2. Potential for continued State/local response

The State of Connecticut has committed resources

including up to \$5 million to implement interim measures on the currently identified sites. CT DEP has indicated that the resources required to implement long term remedy on non-municipal sites are not currently available. CT DEP has requested that EPA supplement state and local resources to address the Sites.

EPA will work with CT DEP and the Town of Stratford to determine what institutional controls will be required to prevent the disturbance of interim measures to ensure no intrusive actions are taken without prior notification and approval of the EPA, CT DEP, and/or local authorities.

In addition, the Town of Stratford Conservation Division of the Department of Public Works has agreed to perform periodic inspections and maintenance to ensure that the integrity of site security measures are maintained.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions presently exist at the Sites which, if not addressed by implementing the response action documented in this Action Memorandum, may lead to an imminent and substantial endangerment to the public health or welfare or the environment.

A. Threats to Public Health or Welfare

The potential exists for exposure to hazardous substances by nearby populations if the sites remains unaddressed. Currently, waste has been identified in areas such as adjacent to public schools, recreational fields, residential areas, and commercial areas. The current and future threat at the sites is posed by the presence of metal, asbestos and organic contamination in surface and near surface soils. The potential exists for both on- and off-site exposure to the local population.

As indicated above, the primary routes of exposure are through direct contact with contaminated soils, followed by ingestion, and the inhalation of airborne dusts. A brief summary of the toxicological information available about some of the contaminants identified in Section II. A. 4. above is provided in Appendix A.

The Agency for Toxic Substance and Disease Registry ("ATSDR") has reviewed the results of the analysis of soil samples collected and screened by EPA, CT DEP, and CT DOHS

in April of 1993. The results indicated that asbestos, PCBs and levels of lead significantly greater than background were present on the Sites. Based on those results, ATSDR issued a Public Health Advisory on May 26, 1993. ATSDR has concluded that there is an "imminent public health hazard" associated with exposure to Raymark waste. ATSDR also indicated that there is an urgent health hazard to the public associated with the 7 sites identified above and the residential properties adjacent to the Raybestos Memorial Field.

Based on 1988 census information, within one half a mile of the Raymark facility there are approximately 2600 people residing and, within one quarter of a mile, there are approximately 500. The population at risk surrounding all satellite sites is far greater although not quantifiable as yet.

Quantities and Types of Substances Present

The types of substances currently identified as characteristic components of Raymark waste and present at known satellite disposal sites includes PCB's, asbestos (present in friable form), lead and dioxins (found on the Raymark site proper).

Insufficient data exists to provide an accurate estimate of the volume of hazardous substances and contaminated soil present or the quantity of hazardous substances that were disposed of on the Sites. Anticipated assessment actions are intended to quantify the waste material.

EPA is currently investigating, as part of this action, all locations where waste may have been disposed. Based on currently available information, it is possible that Raymark disposed of waste off-site for more than 50 years, from approximately 1920 until 1978. During most of that time, the material was used as fill.

IV. ENDANGERMENT DETERMINATION

The Agency for Toxic Substances and Disease Registry has determined that the concentrations of contaminants present on the seven sites pose an imminent public health threat.

Actual or threatened releases of hazardous substances from these Sites, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

A. Emergency Exemption

N/A

B. Consistency Exemption

1. Continued response actions are otherwise appropriate and consistent with the remedial action to be taken.

As indicated above the Sites are not currently on the NPL; however, the Region is evaluating expediting the listing as a result of the Health Advisory.

To the extent practical, considering the threat posed to public health and welfare, the removal actions implemented (interim measures) will be consistent with long term remedies. As indicated above, CT DEP has taken the lead on implementing interim measures at the eight sites identified to date. The CT DEP temporary cover consists of geotextile overlain by a layer of clean free draining material covered with a soil layer which will be vegetated.

Depending on the chemical composition of the waste and volume of material present, capping or excavation are likely to be the preferred alternatives. It is likely that for EPA-lead sites, where the selected interim measures includes capping, a design similar to DEP's will be chosen.

Based on the public health threats, the potential for surficial migration, and the probable ARAR considerations a temporary cap will be the most appropriate intermediate remedy for sites with surficial/exposed waste and highly contaminated soils.

Should the permanent remedy preclude a waste in place solution, the cap can be stripped and removed as clean fill. Should a waste in place solution be chosen and include capping, the interim measure can be used as a base layer.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Description of proposed action(s)

EPA is participating in a collaborative effort with the Town of Stratford, the State of Connecticut and the Agency for Toxic Substance and Disease Registry, to address the imminent health threat posed by the presence of surficial contamination at the Sites.

Proposed activities by EPA include:

- * Providing technical assistance to CT DEP in the design and construction of interim measures at the 8 (seven sampled sites and the residential properties adjacent to Raybestos Memorial Field) sites identified in the ATSDR Health Advisory.
 - Assistance with ARAR evaluation and coordination of Army Corps of Engineers support.
 - Field oversight and technical support during construction.
 - Surficial soil sampling and field screening for PCBs, asbestos and lead to characterize the lateral and vertical extent of contamination.
 - Collection and field screening of surficial soil samples from all properties contiguous to the Sites.
- * Providing Technical assistance to the CT DEP and others as requested to collect and analyze sediment and marine organism samples from Ferry Creek and the Housatonic River necessary to evaluate the potential health threat posed by consumption of seafood from the area potentially effected by Raymark waste.
- * Conducting indoor sampling of residences as appropriate.
- * Investigating other sites suspected to have received Raymark waste, including when necessary, surficial samples for screening and confirmatory analysis.
- * Providing technical assistance to the Waste Management Division Superfund Support Section in the collection of any additional data required to complete the expedited listing evaluation.

- * Initiating a site discovery program to locate other waste disposal areas.
 - * Providing technical assistance to the Town and the CT DEP in the design and oversight of PRP lead clean-up actions.
 - * Sampling soils surrounding schools, day care centers, at beaches and other recreational areas.
 - * Providing technical assistance as requested to the Town of Stratford in implementing and tracking the area well survey.
 - * Ordering and/or designing and implementing measures at sites identified during the investigation and discovery activities which will result in abating the threat to public health..
2. **Discussion of how the removal action contributes to the performance of remedial activities at the Site**

There is currently no long-term (remedial) cleanup plan for the Site. As indicated above, EPA is evaluating the Sites for NPL listing. The actions proposed in this Action Memorandum are designed to mitigate the threat to human health or welfare and will, to the extent practicable contribute to the efficient performance of any long term remedial actions.

3. **Applicable or Relevant and Appropriate Requirements (ARARs)**

Based on the scope of the removal action the following ARARs were determined to be practicable:

Clean Air Act National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asbestos 40 C.F.R. Part 61 Subpart M as it pertains to waste handling, transport, and inactive landfill capping.

Resource Conservation and Recovery Act (RCRA) regulations, 40 C.F.R. Parts 260-270, pertaining to management, transportation, treatment and disposal of waste generated during the investigation and implementation of the removal actions.

The only standard identified as impracticable relates to RCRA which requires generators to transport hazardous waste off-site within 90 days of generation. It is anticipated that a single shipment of waste will

occur at the end of the project and it will likely be greater than 90 days after generation.

Additional ARARs including wetland and Coastal Zone Management requirements are being evaluated with the assistance of the Army Corps of Engineers and CT DEP.

Additional ARARs have been requested from the State and may be identified as the removal action progresses.

4. Project schedule

EPA's extent of contamination sampling survey to support actions being planned by the CT DEP began Monday, June 7, 1993. Site sampling and investigation activities should be completed by August, 1993. Other components of the removal action will be implemented as the project develops. Measures necessary to mitigate identified threats to human health or welfare will be given the highest priority.

A. Estimated Costs

<u>Extramural Costs:</u>	<u>Proposed Ceiling</u>
<u>Regional Allowance Costs</u>	
ERCS Costs - Contingency To Initiate action	\$ 3,000,000.00
Army Corps of Engineers Design/Oversight Costs	\$ 100,000.00
<u>Other Extramural Costs Not Funded From the Regional Allowance</u>	
TAT Costs (including multiplier)	\$ 500,000.00
Contract Lab Program Analytical	\$ 200,000.00
ERT/REAC	<u>\$ 100,000.00</u>
Subtotal, Extramural Costs	\$ 3,800,000.00
<u>Intramural Costs:</u>	
Intramural (incl. indirect costs)	<u>\$ 400,000.00</u>
Subtotal, Intramural Costs	\$ 400,000.00
<u>Total Project Cost:</u>	
Subtotal Intramural and Extramural Costs	\$ 4,200,000.00
Project Contingency (Approx. 20% of Extramural \$'s)	\$ 840,000.00 =====
TOTAL REMOVAL PROJECT CEILING	\$ 5,040,000.00

VII. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in a continuing risk to the public health. Failure to implement the removal action will result in erosion of any interim covers increasing

the potential for direct contact with and inhalation and ingestion of contaminants in surface and near surface soils.

VIII. OUTSTANDING POLICY ISSUES

Nationally Significant or Precedent-Setting: No²

The Sites currently being evaluated to determine the need for mitigation comprise 15 non-contiguous areas in Stratford, Connecticut, greater than 1/4 mile apart. The site discovery activities may identify a number of additional areas as well.

IX. ENFORCEMENT

Please refer to Appendix B.

² Although there is asbestos present, there are other contaminants present (including PCBs and lead). Therefore, the March 3, 1989 Guidance on Non-NPL Removal Actions Involving Nationally Significant or Precedent Setting Issues does not apply.

X. RECOMMENDATION

This decision represents the selected removal action for the Stratford, Connecticut Sites developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on documents that will be included in the Administrative Record for the Site.

Conditions at the Stratford Sites meet the NCP section 300.415(b)(2) criteria for a removal and the CERCLA section 104(c) exemption from the \$2 million limitation criteria. The NCP Section 300.415 criteria for a removal action are:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;" [300.415(b)(2)(i)];

"High level of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" [300.415(b)(2)(iv)];

"Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;" [300.415(b)(2)(v)].

Conditions at the Stratford Sites, Stratford, Connecticut, meet the NCP section 300.415(b)(2) criteria for a removal and the CERCLA section 104(c) exemption from the \$2 million limitation, and I recommend your approval of the proposed removal action and \$2 million exemption. The total project ceiling if approved will be \$5,040,000 of which an estimated \$3,000,000 is from the supplemental FY 93 regional removal allowance and is for extramural assessment, design and cleanup contractor costs. You may indicate your approval or disapproval by signing below.

Regional Administrator

Approve: *Patricia Murray* Date: 6/15/93
for P.R.

Disapprove: _____ Date: _____

Assistant Administrator, Office of Solid Waste and Emergency Response

Approve: _____ Date: _____

Disapprove: _____ Date: _____

Appendix A

The potential impacts of **asbestos** exposure are chronic in nature and may not manifest themselves for a number of years after initial exposure. Diseases that are linked to asbestos include asbestosis, a chronic lung inflammation, and a variety of cancers which vary in their prognoses. The most deadly cancer which is linked to inhalation of asbestos is mesothelioma, a disease which results in the destruction of the mesothelium, the lining surrounding various abdominal organs. Mesothelioma is 100% fatal within a period of one to two years after diagnosis.

The following excerpt from a report published by the Agency for Toxic Substance and Disease Registry (ATSDR) of the U.S. Public Health Service, describes the potential health impacts of PCBs:

"Some PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects and cancer. Therefore, it is prudent to consider that there may be health hazards for humans. Human studies to date show that irritations, such as acne like lesions and rashes, can occur in PCB-exposed workers. Other studies of people with occupational exposure suggest that PCBs might cause liver cancer. Reproductive and developmental effects may also be related to occupational exposure and eating of contaminated fish. While the role of PCBs in producing cancer, reproductive, and developmental effects cannot be clearly delineated, the suggestive evidence provides an additional basis for public health concern about humans who may be exposed to PCBs."

The following excerpt from a report published by the Agency for Toxic Substance and Disease Registry (ATSDR) of the U.S. Public Health Service, describes the potential health impacts of lead:

¹ Toxicological Profile for Selected PCBs (Aroclor-1260, -1254, -1248, -1242, -1232, -1016), published by the Agency for Toxic Substance and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June 1989, Section 1, p 2.

"Exposure to lead is especially dangerous for unborn children because their bodies can be harmed while they are being formed. If a pregnant woman is exposed to lead, it can be carried to the unborn child and cause premature birth, low birth weight, or even abortion. Young children are at risk because they swallow lead when they put toys or objects soiled with lead-containing dirt in their mouths. More of the lead swallowed by children enters their bodies, and they are more sensitive to its effects. For infants, or young children, lead exposure has been shown to decrease intelligence (IQ) scores, slow their growth, and cause hearing problems. These effects can last as children get older and interfere with successful performance in school.

... Because laboratory animals fed lead in their diet throughout their lives have developed tumors, lead should be thought of as a probable cancer-causing substance in humans.

Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Lead exposure may increase blood pressure in middle-aged men...Lead may affect [a man's] sperm or damage other parts of the male reproductive system."²

² Toxicological Profile for Lead, published by the Agency for Toxic Substances and Disease Registry, U.S. Public Health Service, Department of Health and Human Services, June, 1990, Section 1, pp 2-3.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

MEMORANDUM

DATE: September 10, 1992

SUBJECT: Action Memorandum for the Raymark Industries, Inc. Site, Stratford, Fairfield County, Connecticut. Request for Contingency Funds to Allow Transition from Enforcement-lead to Fund-lead Removal Action.

FROM: Arthur K. Wing, On-Scene Coordinator
Site Evaluation and Response Section II,
Environmental Services Division

AKW

Michael C. Hill, RCRA Facility Manager
Connecticut Waste Regulation Section
Waste Management Division

M. Hill

THRU: Edward J. Conley, Director
Environmental Services Division

EJ Conley

Merrill S. Hohman, Director
Waste Management Division

Merrill S. Hohman
ACTIVE FOR

TO: Julie Belaga, Regional Administrator

I. PURPOSE

Authorization is hereby requested for \$1,961,250 to commence a time-critical Removal Action at the Raymark Industries, Inc. Site (the "Site"), on 75 East Main Street in Stratford, Fairfield County, Connecticut, 06497. These funds will only be utilized in the event Raymark Industries, Inc. ("Raymark"), fails to perform work required under an EPA Administrative Order issued pursuant to Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act, as amended ("CERCLA"), 42 U.S.C. § 9606, Docket number I-92-1072 (the "Order").

This action will ensure that EPA can provide a timely response to effectively minimize and/or mitigate danger to the public health or welfare or the environment which may result from a release or threat of release of hazardous substances at the Site. Such danger could be caused by direct contact followed by the ingestion of the organic, metal, and asbestos contaminated soils and surficial friable asbestos-containing materials ("ACM") disposed of at the Site. A second route of exposure to local populations could be the inhalation of contaminated dusts from the Site.



The Removal Actions described herein are intended to eliminate the actual or potential exposure to nearby human populations, and to eliminate the potential for migration of contamination present in, the surface and near-surface soils.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

CERCLIS ID #: CT D001186618

Site ID #: H1

Category: Time Critical

1. Removal site evaluation

The Site was used for the manufacture of brake linings, clutch parts and other automotive asbestos based products at Raymark's Stratford facility from 1919 through 1989. According to Raymark Industries, Inc., lagoon areas located on Site were used to dispose of asbestos waste and other manufacturing waste streams.

The Connecticut Department of Environmental Protection ("DEP") and EPA have taken a series of administrative actions to require Raymark to close all surface impoundments, to update asbestos and hazardous waste handling procedures and to bring groundwater monitoring well networks into compliance with applicable Resource Conservation and Recovery Act ("RCRA") regulations, both Federal and State.

The EPA Environmental Services Division ("ESD") Ambient Air and Emissions Monitoring Section conducted an investigation of suspected airborne organic compounds and asbestos in the vicinity of Raymark on June 26, 1984. Levels of toluene were detected 200-400 yards away (downwind). An air monitoring station for asbestos was located in a shopping mall to the north of the facility and no asbestos was detected.

The Superfund Removal Program conducted a Site Assessment on August 28, 1991 and September 13, 1991 and collected additional soil and water samples for volatile organic compounds ("VOC"), base/neutral and acid-extractable compounds ("BNA"), polychlorinated biphenyls ("PCBs"), pesticides, asbestos, and metals analyses.

Contaminants that have been identified include asbestos, heavy metals and organics, including PCBs. Analysis of the soil samples collected on August 28, 1991 indicated elevated levels of asbestos, lead, copper, zinc, and nickel in the waste lagoon areas. Elevated levels of PCBs were also recorded in the lagoon areas and in an isolated spot on the west side of the facility near the rail lines.

Currently there are four (4) waste lagoons, in an approximately four (4) acre area where organic, heavy metal, and asbestos contamination has been identified.

2. Physical location

The Raymark Site is approximately 33 acres in an urban/industrial setting. The property is located at 75 East Main Street, Stratford, Connecticut. The geographic coordinates for the Site are as follows:

41° 15' 29" Latitude, and
73° 07' 30" Longitude.

The Site is identified on Town of Stratford Tax Maps F-12 and G-12. The Site is bounded to the west by a Metro North rail line (rail bed currently owned by CT DOT) which separates the Site from the Raybestos Memorial Field Superfund Site, to the north by East Main Street (beyond which is "The Dock" shopping mall), to the east by East Main Street and south by the Ferry Boulevard and the Barnum Avenue Cut Off of Interstate 95. Beyond the lagoon areas are Ferry Boulevard and Barnum Avenue. Directly east and south of these roads are U.S. Route One and Interstate 95.

3. Site characteristics

The Raymark facility consists of several production buildings (approximately 500,000 square feet) and four (4) lagoons. The southern most building is currently leased to Pirotti and Sons, a waste hauler, and appears to be used as a solid waste transfer station.

The majority of production buildings occupy the north west corner of the Site. Much of the open area to the south and east of the facility is paved and was used as a parking lot. East of the parking lot are areas, adjacent to Barnum Avenue, covered with piles of construction/residential debris and solid waste. The hazardous waste lagoons are located on the extreme southern end of the property.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The following is a partial list of hazardous substances, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), identified in the near surface soils at the Site as a result of EPA's investigations.

<u>Contaminant</u>	<u>Concentration</u> (parts per million)
Friable Asbestos	75 % ¹
Lead	7,000
Copper	3,000
Zinc	1,000
Nickel	500
PCB (Aroclor 1242)	9,200
PCB (Aroclor 1260)	170

Currently, there is no information on the quantity of material disposed of at the Site; however, due to the length of time the Site was used, the quantity of material that may have been disposed is substantial.

The hazardous substances identified in the soils, waste pile, and lagoons can migrate from the Site into the air, groundwater and/or surface water. The groundwater in the Stratford area is considered low quality as a result of contamination from industrial sources and is not known to be used for any drinking purposes. The surface water runoff, however, could result in the transport and deposition of surficial contamination off-site.

Potentially the most significant route of contaminant migration from the Site is surficial soil/dust blowing off-site. The dusts could be inhaled, possibly exposing the nearby populations to asbestos fibers and other contaminants.

An additional potential route of exposure is direct contact with the contaminated soils on the Site followed by inhalation/ingestion. Contaminated soil is also being stored on Site as a result of a 1984 underground toluene storage tank removal. As of September 1991, when the Removal Program Site Assessment was conducted, there were limited Site control measures in place. Although there was perimeter fencing, uncontrolled access to the Site was

¹ Percent by volume of soil sample analyzed.

still possible through various openings in the fence from East Main Street, Ferry Boulevard, and Barnum Avenue. In addition, portions of the perimeter fence were also damaged and could be easily breached allowing access to the facility.

In some areas surrounding the lagoons, the fencing is damaged or not in place. Gates to the lagoons are often open providing direct access to the lagoons. Historically, EPA has found bicycle tracks around the lagoon area of the Site. With residential populations near the Site, there is a fairly high potential for direct contact with contaminated soil or asbestos-containing materials. In addition to the residential population, employees of the leased space on the Site (currently used as a commercial transfer station) have daily access to the facility and therefore are potentially in direct contact with contaminated soil or asbestos-containing materials.

Many of the buildings on the Site which house hazardous substances are dilapidated, and contain numerous unsecured building openings (doors, windows, holes and cracks) which increase the risk of release and exposure of hazardous substances to nearby human populations and the environment. Evidence of children playing and being exposed to hazardous substances in these run-down buildings is illustrated by the abundant graffiti on the inside walls of the buildings.

There are four (4) 100,000 gallon tanks containing asbestos slurry and phenol located above ground at the Site. The integrity of these tanks is unknown. Therefore there exists a threat of a release of hazardous substances, and a potential threat to human health and the environment.

5. NPL Status

The Site has not received a Hazardous Ranking System ("HRS") ranking and is not proposed as an NPL Site. The property is currently being evaluated by the EPA Superfund Support Section (i.e., preremedial site assessment group).

6. Maps, pictures, and other graphic representations

- a. The Removal Program Preliminary Site Assessment for the Stratford Asbestos Sites Stratford, Connecticut, dated February 1989.
- b. The Supplemental Site Investigation for Raymark Facility Site in Stratford, Connecticut, dated October 1991.

- c. The Resource Conservation and Recovery Act (RCRA) § 3013 Detailed Work Plan Under EPA Order 87-1057 Requiring a Sampling, Analyses, and Reporting for Determination of the Presence or Release of Hazardous Waste at Raymark Industries, Stratford Connecticut, dated March 15, 1991.

B. Other Actions To Date

1. Previous actions

Raymark Industries, Inc. has removed several underground storage tanks, numerous drums of hazardous waste, and consolidated several thousand 1.5 cubic yard bags of asbestos waste some of which are lead-contaminated, in a couple of centralized locations. Contaminated soil is also being stored on Site as a result of a 1984 underground storage tank removal. Raymark removed the tank after finding it was leaking toluene.

In 1986 the United States filed a judicial complaint under the Clean Air Act against Raymark for civil penalties and injunctive relief for numerous violations of the National Emission Standard For Asbestos. The case was settled for \$135,000.

2. Current Actions

EPA issued an administrative order to Raymark under the authority of Section 3013 of RCRA, 42 U.S.C. § 6934, on March 31, 1987 to investigate and delineate the nature, rate, and extent of contamination on- and off-site. Raymark has commenced some of the work on-site, but not according to the EPA approved schedule.

On July 31, 1991, the United States filed a civil action ("Complaint") in the federal district court of Connecticut against Raymark to enforce both the RCRA regulations, and two previous administrative consent agreements entered into in 1985 and 1988 between EPA and Raymark. The Complaint also requests that the Court order Raymark to comply and implement an investigation ordered by the EPA in the 1987 RCRA Section 3013 Order described in the preceding paragraph and incorporate the findings of the investigation into a plan for cleaning up the Site.

The complaint also requests that Raymark submit and implement plans to properly close their regulated hazardous waste management areas, remove all hazardous waste, and comply with the groundwater monitoring assessment program.

a. Bankruptcy Proceedings

Raymark Industries, Inc. is currently involved in involuntary Chapter 11 bankruptcy proceedings. The Court has denied Raymark's motion to dismiss the involuntary bankruptcy action.

The Department of Justice ("DOJ") on behalf of EPA filed a Proof of Claim against Raymark in the U.S. Bankruptcy Court in November, 1990 for \$12,075,000.

C. State and Local Authorities' Roles

1. State and local actions to date

The DEP issued an administrative order in 1983. The order required Raymark to update their hazardous waste handling procedures and to bring the groundwater monitoring well network into compliance. Raymark did not comply with DEP's order, and DEP subsequently requested EPA to take action at the Site.

2. Potential for continued State/local response

There are no resources available at the State or local level to address the Site.

If the Site reverts from enforcement- to Fund-lead at some time during the project, EPA will assess the availability of State and local resources to perform the cleanup. Should resources not be available from these sources, EPA shall access the contingency funds authorized by this Action Memorandum to perform the work.

In addition, whether the Site is enforcement- or Fund-lead, the action will result in a waste-in-place solution. Consequently periodic post-removal inspections will be needed to ensure that the integrity of any fence or cover/cap is maintained.

If the project reverts to a Fund-lead action, the Town of Stratford has agreed to conduct the inspections.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions presently exist at the Site which, if not addressed by implementing the Removal Actions documented in this Action Memorandum, or an equally protective action implemented by Raymark, may present an imminent and substantial endangerment to the public health or welfare or the environment.

A. Threats to Public Health or Welfare

The potential exists for exposure to hazardous substances by nearby populations, both on- and off-site. High concentrations of heavy metals, asbestos and organic contamination have been identified in surface and near surface soils, tanks, sumps, drums and buildings as noted above in Paragraph II.A.4.

The primary route of exposure is through the inhalation of airborne dusts. Other potential routes of exposure result from direct contact with contaminated soils followed by inhalation or ingestion. Toxicological/health impact information about some contaminants identified in Section II. A. above is provided in Appendix A of this memorandum.

In February 1992, ATSDR reviewed the data gathered in the Supplemental Site Investigation For Raymark, dated October 1991. On March 6, 1992, ATSDR determined that "the Site remains a potential health threat via inhalation, dermal contact, and ingestion." The major hazardous substances, pollutants and/or contaminants that are being released or for which there is threat of release includes: asbestos-containing soil, water, and air, including tanks of asbestos slurry and lagoons containing sludge; lead, copper and nickel found in the soil and water; as well as PCBs, Toluene, 4-Methyl-2-Pentanone, Ethylbenzene, 1,1-Dichloroethane, Carbene Disulfide, and 1-1-1-Trichloroethane, all of which are found in the soil or water, or both.

B. Quantities and Types of Substances Present

Insufficient historical data exists to provide an accurate estimate of the volume of hazardous substances and contaminated soil present on Site. Lagoons at the Site were used for disposal of a variety of industrial waste streams generated by Raymark.

From 1919 to July, 1984, the Respondent utilized a system of lagoons, known as a "wet" dust collection system, to attempt to capture the waste lead and asbestos dust produced by its manufacturing process. These lagoons formed a cascading treatment system. Wastewater was initially pumped to two (2) primary lagoons where solids settled out. Overflow was collected in a third lagoon for further settling of solids. Final settling of solids occurred in a fourth lagoon which then discharged its wastewater via a 2000 foot culvert to Ferry Creek. Liquids and materials in the fourth lagoon were intended to be free of suspended asbestos and lead-asbestos solids; however, the fourth

lagoon was dredged many times, indicating that the system was not completely effective in settling solids.

Over this sixty-five (65) year period, the lagoon systems were located all over the western and central areas of the facility. As the lagoons filled with sludge, they were covered with asphalt and often built upon. A new set of lagoons would then be excavated and filled.

Currently, only the last series of four (4) lagoons are still visible. Lagoons 1 and 2 are now dry, except during periods of rainfall. The decayed remains of one (1) 55 gallon drum is visible in Lagoon 3. The base of this lagoon is below the water table elevation and therefore contains liquid. There is evidence of stressed vegetation in this lagoon and surrounding area. Lagoon 4 still serves as a collection basin and final discharge point for the facility's yard drain system and is always filled with liquid. Asbestos-laden waste paper (friction paper) and brake pads have been observed partially buried along all sides of Lagoon 4 by EPA personnel during various site inspections conducted up until and including the most recent EPA site inspection on June 23, 1992.

The drum storage area (which Raymark used to store hazardous waste containers for greater than 90 days) is constructed in two (2) sections. The section used to store liquid hazardous wastes is constructed with a bermed cement base. The section used to store non-liquid hazardous wastes is constructed with an asphalt base. The entire area is equipped with a corrugated metal roof, a chain link fence, a sprinkler system, and a sump. This area has been used to store waste solvents such as toluene, as well as ignitable oils and corrosive resins.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the Removal Action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Description of proposed action(s)

If at any time Raymark fails to comply with the CERCLA § 106 administrative order, the OSC may access the contingency funds requested in this Action Memorandum to perform any work that Raymark has failed to complete, or correct work that was inadequately completed.

The following is a brief description of the planned activities:

- Secure buildings and the site perimeter to minimize unauthorized access;
- Place a cover over Lagoons 1, 2, and 3 and around the perimeter of Lagoon 4 to reduce risks associated with exposure to asbestos, metals, and organic solvents;
- Identify, characterize, and assess the integrity and contents of tanks (above and underground), sumps, and drums and remove appropriate materials to reduce risks to human health and the environment;
- Remove for off-site disposal and/or treatment the approximately 400 cubic yard pile of solvent and lead contaminated soil generated as a result of the prior excavation of a leaking underground storage tank. The soil will be sent to an off-site facility in compliance with applicable federal and state laws and regulations, pursuant to Section 121(d)(3) of CERCLA, 42 U.S.C. § 6921(d)(3); and
- Assess potential off-site migration of contaminants and implement measures necessary to mitigate those releases consistent with Removal Action criteria, 40 C.F.R. § 300.415.

Work shall be performed in accordance with occupational health and safety standards as specified in 29 C.F.R. § 1910.120 and in asbestos specific work practices described in 29 C.F.R. § 1926.58. In addition, work standards that can be adapted to outdoor cleanups from Asbestos Hazard Emergency Response Act ("AHERA") found in 40 C.F.R. Part 763 shall be used.

Since the Removal Action involves capping of the lagoons (i.e., contamination remaining at the Site), the Agency will determine what institutional controls, such as a deed restriction designed to prevent usage of the property which would disturb a cap, will be required.

2. Discussion of how the Removal Action contributes to the performance of remedial activities at the Site

There is currently no long-term (remedial) cleanup plan for the Site. As discussed above, the Site is being evaluated under the HRS scoring process. The Removal Action proposed in this Action Memorandum is designed to provide, to the extent attainable, a protective action which will mitigate near term human health threats posed by the Site.

3. Project schedule

The anticipated duration of the complete project is approximately one year. Should the contaminant migration assessment result in identifying Removal Actions necessary to mitigate further off-site releases, the project may be extended.

It is very difficult to estimate the duration of the project should it revert to a Fund-lead action. The duration of EPA funded work will be determined by the phases of work completed by Raymark prior to the Agency take over.

4. Compliance with Applicable or Relevant and Appropriate Requirements ("ARARs")

Pursuant to 40 C.F.R. § 300.415(i), the following statutes and regulations are Federal and State ARARs for the Site which will be attained to the extent practicable, considering the urgency of the situation and the scope of the Removal Action to be taken:

FEDERAL ARARs

CLEAN AIR ACT

CAA National Emission Standards for Hazardous Air Pollutants ("NESHAPs") for Asbestos, 40 C.F.R. Part 61: Subpart M includes standards for waste handling, transport and inactive landfill capping.

CLEAN WATER ACT

Potential migration of hazardous waste into wetlands or surface water has yet to be determined. This analysis is part of the Removal Action. Federal ARARs for these activities will be developed as necessary.

RESOURCE CONSERVATION AND RECOVERY ACT

RCRA Subtitle C: requirements for generation, treatment, storage and disposal of hazardous waste under interim status.

TOXIC SUBSTANCES CONTROL ACT

Disposal of PCBs (40 C.F.R. § 761): If the remedy involves excavation of soils that contain PCBs, the requirements of this section must be satisfied. However, the section does not explicitly require excavation of PCB-containing soil.

STATE ARARs

Air Pollution, Control of Particulate, Regulations of Connecticut State Agencies (RCSA) Section 22a-174-18.

Hazardous Waste Management, RCSA Sections 22a-449(c)-1 through 22a-449(c)-43: includes regulations for manifesting, transport, requirements for hazardous waste generators and interim status standards for hazardous waste facilities.

The following were identified as requirements to be considered ("TBC") for the Site:

- 1) TSCA PCB Spill Cleanup Policy (40 C.F.R. § 761): requirements for cleanup of PCB-contaminated soil in a residential area.
- 2) Guidance on Remedial Actions for Superfund Sites with PCB Contamination (EPA/540/G-90/007; August 1990). While this guidance applies to CERCLA remedial actions, certain portions may have application to the Removal Action at this Site.

Additional ARARs may be identified as the Removal Action progresses.

B. Estimated Costs

This estimate assumes that all Removal Actions required under the CERCLA § 106 Order shall be performed by EPA.

<u>Extramural Costs:</u>	<u>Proposed Ceiling</u>
ERCS Costs	\$1,380,000
Army Corps of Engineers Design Costs	20,000
TAT Costs	<u>55,000</u>
Subtotal Extramural Costs	1,455,000
<u>Intramural Costs:</u> (Including Indirect Costs)	114,000
<u>Total Project Cost:</u>	
Subtotal Intramural and Extramural Costs	\$1,569,000
Project Contingency (25% of all costs above)	<u>392,250</u>
Total Project Costs	\$1,961,250

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in a continuing risk to the public health or welfare. Failure to implement the Removal Action will result in further erosion of the existing lagoon areas, increasing the potential for direct contact with and inhalation of contaminants in surface and near surface soils. An additional potential route of exposure is direct contact with the contaminated soils on the Site as well as inhalation and ingestion. Further, many of the buildings on-site which house hazardous substances are dilapidated, therefore increasing the risk of release and exposure of hazardous substances to nearby human populations and the environment. Delayed action will result in continued unauthorized pedestrian access onto or through the Site, as well as continued access into numerous open, unlocked points of entry (windows and doorways) into the buildings. Failure to remove the waste pile within a timely manner will result in continued risk of exposure of hazardous substances to humans. Failure to determine the integrity of the four (4) 100,000 gallon tanks containing asbestos slurry and phenol increases the risk of release and exposure of hazardous substances to nearby human populations and the environment.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

See Appendix B. Appendix B is enforcement confidential and therefore not a part of the Administrative Record.

IX. RECOMMENDATION

This decision represents the selected Removal Action for the Raymark Industries, Inc. Site in Stratford, Connecticut, developed in accordance with CERCLA as amended, and is not inconsistent with the National Contingency Plan ("NCP"), 40 C.F.R. Part 300. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP criteria for a removal in that there are:

"Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;" [40 C.F.R. § 300.415(b)(2)(i)].

"High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" [40 C.F.R. § 300.415(b)(2)(iv)].

"Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;" [40 C.F.R. § 300.415(b)(2)(v)].

To mitigate the continuing threats posed to the public health and welfare, I recommend your approval of the proposed Removal Action. The estimated total project cost is \$1,961,250 of which \$1,725,000 are for extramural design and cleanup contractor costs. The additional funds will be used to perform work should Raymark fail to comply with the CERCLA § 106 Order. You may indicate your approval or disapproval by signing below.

Approve: *Juana Belofa* Date: *Sept. 11, 1992*
Disapprove: _____ Date: _____

APPENDIX A

The potential impacts of asbestos exposure are chronic in nature and may not manifest themselves for a number of years after initial exposure. Diseases that are linked to asbestos include asbestosis, a chronic lung inflammation, and a variety of cancers which vary in their prognoses. The most deadly cancer which is linked to inhalation of asbestos is mesothelioma, a disease which results in the destruction of the mesothelium, the lining surrounding various abdominal organs. Mesothelioma is 100% fatal within a period of one to two years of diagnosis.

Samples collected from the Site indicate that there is asbestos in the soils above the 1% action level established by the Agency for Toxic Substances and Disease Registry ("ATSDR").

ATSDR's Record of Activity dated March 6, 1992 notes that after reviewing the most recent ATSDR data package dated November 14, 1991, the Site remains unrestricted. The data package also noted that since a 1986 inspection there is still asbestos present at the facility throughout various locations. Further it was noted in the ATSDR data package dated November 14, 1991 that high levels of PCBs (9,200 ppm) are present in the soil (post-initial clean-up) in the area of the northern edge of the Site along the railroad tracks. The Site is located in an urban/residential area with a shopping mall located within 100 yards of the Site. Asbestos is a known carcinogen and the location of the Site with respect to businesses, residences and the recreational areas results in a large population being potentially exposed to this material. (A copy of this ATSDR Summary is attached to the Action Memorandum.)

The following is an excerpt from a report published by the Agency for Toxic Substance and Disease Registry (ATSDR), U.S. Public Health Service entitled, "Toxicological Profile for Selected PCBs," (Aroclor 1260, 1254, 1248, 1242, 1232, 1221, and 1016):

"(S)ome PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects and cancer. Therefore, it is prudent to consider that there may be health hazards for humans. Human studies to date show that irritations, such as acne like lesions and rashes, can occur in PCB-exposed workers. Other studies of people with occupational exposure suggest that PCBs might cause liver cancer. Reproductive and developmental effects may also be related to occupational exposure and eating of contaminated fish. While the role of PCBs in producing cancer, reproductive, and developmental effects cannot be clearly delineated, the suggestive evidence provides an additional basis for public health concern about humans who may be exposed to PCBs."²

² "Toxicological Profile for Selected PCBs," (Aroclor-1260, -1254, -1248, -1242, -1232, -1016), published by the Agency for Toxic Substance and Disease Registry. U.S. Public Health

The following is an excerpt from a report published by ATSDR of the U.S. Public Health Service, describes the potential health impacts of lead:

"(E)xposure to lead is especially dangerous for unborn children because their bodies can be harmed while they are being formed. If a pregnant woman is exposed to lead, it can be carried to the unborn child and cause premature birth, low birth weight, or even abortion. Young children are at risk because they swallow lead when they put toys or objects soiled with lead-contained dirt in their mouths. More of the lead swallowed by children enters their bodies, and they are more sensitive to its effects. For infants, or young children, lead exposure has been shown to decrease intelligence (IQ) scores, slow their growth, and cause hearing problems. These effects can last as children get older and interfere with successful performance in school.

... (B)ecause laboratory animals fed lead in their diet throughout their lives have developed tumors, lead should be thought of as a probable cancer-causing substance in humans.

Exposure to high levels of lead can cause the brain and kidneys of adults and children to be badly damaged. Lead exposure may increase blood pressure in middle-aged men... Lead may affect (a man's) sperm or damage other parts of the male reproductive system."

ACTIONMEM.910

Service, published, June 1989, pg 2 Section 1.

ATSDR Record of Activity

UID #: lah3 Date: 3/ 6 / 92 Time: _____ am _____ pm
 Site Name: Raymark Industries City: Stratford Cnty: Fairfield State: CT
 CERCLA IS #: _____ Cost Recovery #: 10h1 Region: I
 Status (1) NPL Non-NPL RCRA Non-Site specific Federal
 (2) Emergency Response Remedial Removal Other

Activities

Incoming Call Public Meeting Health Consult Site Visit
 Outgoing Call Other Meeting Health Referral Info Provided
 Conference Call Data Review Written Response Training
 Incoming Mail Other

Requestor and Affiliation: (1) Art Wing
 Phone: 617-860-4300 Address: 60 Westview
 City: Lexington State: Ma Zip Code: 02173

Contacts and Affiliation

() _____ () _____
 () _____ () _____

1-EPA	2-USCG	3-OTHER FED	4-STATE ENV	5-STATE HLT
6-COUNTY HLTH	7-CITY HLTH	8-HOSPITAL	9-LAW ENFORCE	10-FIRE DEPT
11-POISON CTR	12-PRIV CITZ	13-OTHER	14-UNKNOWN	15-DOD
16-DOE	17-NOAA	18-OTHR STATE	19-OTHR COUNTY	20-OTHR CITY
21-INTL	22-CITZ GROUP	23-ELECT. OFF	24-PRIV. CO	25-NEWS MEDIA
26-ARMY	27-NAVY	28-AIR FORCE	29-DEF LOG AGCY	30-NRC
31-ATSDR				

Program Areas

Health Assessment Health Studies Tox Info-profile Worker Hlth
 Petition Assessment Health Surveillnc Tox Info-Nonprofil Admin
 Emergency Response Disease Registry Subst-Spec Resch Other
 Health Consultation Exposr Registry Health Education

Narrative Summary:

On February 28, 1992, Art Wing, OSC, ESD/Lex requested that ATSDR comment on the public health implications present at the Raymark Site, Stratford, Connecticut.
 The site covers approximately 33 acres and consists of several production buildings and four lagoons. Four 100,000 gallon tanks contain a total of approximately 250,000 gallons of asbestos slurry (above ground). Bags of dry asbestos are stored in one building. Underground storage tanks are also present.
 ATSDR previously conducted a health consultation on the site on 3/6/89. At that time, it was determined that a public health threat existed due to the friable chrysotile asbestos present at the site.
 After reviewing the most recent data package of 11/14/91, it appears that the site remains unrestricted and there is still asbestos present at the facility.

throughout various locations. It was also noted that high levels of PCBs (9200 ppm) are present in the soil (post initial clean-up) in the area of the northern edge of the site along the railroad tracks. This site is located in an urban/residential area with a shopping mall located within 100 yards of the facility.

Action Required/Recommendations/Info Provided:

Based on the above information, the site remains a potential public health threat via inhalation, dermal contact and ingestion. This consultation is based on the above data only and is not a health assessment for the whole site. I would be pleased to review any other data on this site, however, any new data may necessitate a change in the above conclusion.

Signature: *Louise House* Date: 3.6.92
Concurrence: _____ Date: _____

ERCB #2150
cc: B.Toal

**ACTION MEMORANDUM for OU5 (Shore Road) of the RAYMARK Industries, Inc.
Superfund Site - September 23, 1999**

**Attachment 9
State Concurrence with NTCRA**



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

79 ELM STREET HARTFORD, CONNECTICUT 06106

PHONE: (860) 424-3001



Arthur J. Rocque, Jr.
Commissioner

September 21, 1999

Ms. Patricia Meaney
Office of Site Restoration and Remediation
EPA - New England, Region I
1 Congress Street
Suite 1100 - HIO
Boston, MA 02114-2023

Subject: Proposed Non Time Critical Removal Action
Shore Road/Housatonic Boat Club portion of the Raymark NPL site
Post Removal Site Control

Dear Ms. Meaney:

The Connecticut Department of Environmental Protection will provide post removal site control (pursuant to 40CFR 300.415(l)) for whichever alternative EPA selects to address the Shore Road/Housatonic Boat Club portion of the Raymark NPL site. The alternatives being considered by EPA are described in the Engineering Evaluation/Cost Analysis (EE/CA) document dated July 1999, as revised in August 1999.

If you have any questions concerning this matter, please contact either Christine Lacas at (860) 424-3766 or Elsie Patton at (860) 424-3762.

Sincerely,

Arthur J. Rocque, Jr.
Commissioner

AJR/cal