

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Harmon Railroad Yard  
Wastewater Treatment Area  
Westchester County, New York  
Site Number 3-60-010

New York State Superfund  
Record of Decision



September 1992



New York State Department of Environmental Conservation  
MARIO M. CUOMO, Governor THOMAS C. JORLING, Commissioner

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### Description of Remedy

The selected remedy consists of the following:

- Incineration of the PCB contaminated lagoon sludge at an off-site TSCA-permitted stationary incinerator.
- Disposal of PCB contaminated soil greater than 10 mg/kg at an off-site TSCA-permitted chemical waste landfill.
- Placement of a clay liner over the remediated lagoon area to ensure at least two feet separation between high groundwater and backfill soil.
- Excavate and then place and consolidate low level PCB contaminated surficial soil (less than 10 mg/kg) in the remedied lagoon area.
- Placement of a clay cover over the low level PCB contaminated surficial soil that was placed in the remediated lagoon area.
- Enhancement of the existing free-product recovery system.
- Decontamination, demolition, and proper disposal of the Old Wastewater Treatment Plant for those components of the Old Wastewater Treatment Plant that have been found to be contaminated. (In conjunction with the remediation, Metro-North will be decommissioning the remainder of the Old Wastewater Treatment Plant.)

This remedy will also include an investigation into possible impacts of past releases from the Old Wastewater Treatment Plant and the lagoon on the groundwater, and surface water, and sediment of the Hudson River. If after investigation, it is deemed appropriate, a Feasibility Study will be conducted, another ROD will be issued, and the necessary remedial actions outlined in the ROD will be implemented.

### Declaration

The selected remedy is protective of human health and the environment, and complies with Federal and New York State Standards, Criteria and Guidance (SCGs) which include both those of the State and the United States to the extent that they are more stringent than those of the State (Also referred to as ARARs). The remedy uses solutions acceptable to the local community and elected officials.

September 17<sup>th</sup>, 1992  
Date

Ann Hill DeBarbieri  
Ann Hill DeBarbieri  
Deputy Commissioner  
Office of Environmental Remediation

DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

Harmon Railroad Yard - Wastewater Treatment Area  
Village of Croton-on-Hudson  
New York 10519  
Site Code: 360010  
Funding Source: Environmental Quality Bond Act (1986), Title 3

Statement of Purpose

This document describes the remedial alternatives considered for the hazardous waste disposal site at the Harmon Railroad Yard, Site Code 360010, and identifies the New York State Department of Environmental Conservation's (NYSDEC) selected remedy. The selected remedy conforms to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Exhibit A identifies the documents that form the Administrative Record for the site, which is a basis for the Record of Decision.

Assessment of the Site

Past and potential future releases of hazardous substances from this site pose a threat to public health, welfare, and the environment and need to be remedied.

Statement of Basis

The decision is based upon the Administrative Record for the site and the comments from the public. A copy of the Record is available for public review and/or copying at the following locations:

NYSDEC  
Division of Hazardous Waste Remediation  
50 Wolf Road  
Albany, NY 12233-7010

NYSDEC, Region 3  
21 South Putt Corners Road  
New Paltz, NY 12561

Village of Croton-on-Hudson  
Municipal Building  
Van Wyck Street  
Croton-on-Hudson, NY 10520

## RECORD OF DECISION

Harmon Railroad Yard (Lagoon), Croton-on-Hudson, Westchester County - Site  
I.D.# 360010

### I. SITE LOCATION AND DESCRIPTION

The Harmon Railroad Yard, in Croton-on-Hudson, Westchester County, is an approximately 100 acre maintenance and repair yard owned by Penn Central Corporation of Cincinnati, Ohio and/or its subsidiaries, and presently leased by the Metropolitan Transportation Authority. The facility has been operated since 1983 by Metro-North Commuter Railroad (M-N). The Yard was previously operated by Consolidated Rail Corporation (Conrail). The Yard is located on the northwestern edge of the Croton Point peninsula at latitude 41°12'30" and longitude 73°52'30" as can be seen on the NY Haverstraw quadrangle of the USGS map (Figure 1). The Yard is bounded by the Croton Point Landfill on the south and the Hudson River is approximately 400 feet to the northwest. Historical sand hills of up to 60 feet in height have been levelled by sand mining to make way for the railroad operation. The equalization lagoon and old wastewater treatment plant, hereafter referred to as the "site", occupies 7.5 acres of the maintenance yard and includes the 1.3 acre equalization lagoon/pond, the old wastewater treatment plant, and associated appurtenances (Figure 2).

### II. SITE HISTORY

In 1980, PCBs were discovered in the effluent discharge from the old treatment plant. The source of PCBs was identified as one of the maintenance areas where transformers were serviced by Conrail, which operated the yard from 1976 to 1982 and perhaps Penn Central. This activity caused the release of fluids containing PCBs which were conveyed to the equalization lagoon. Since the treatment process was not capable of removing PCBs, the old treatment plant, its appurtenances, the lagoon, and the pond became contaminated with PCBs. In 1984 the conveyance pipelines were cleaned. Only portions of the old treatment plant and the equalization lagoon and pond remain contaminated with PCBs. In addition, Conrail set up a sand and carbon filtration unit in 1980 to ensure that subsequent discharges from the old wastewater treatment plant would be free of any PCBs.

In 1985, the DEC placed the Harmon Railroad Yard on the State Registry of Inactive Hazardous Waste Disposal Sites because of the presence of PCBs in the lagoon and pond sediments. Of particular concern to NYSDEC was the proximity of the site to the Hudson River. An evaluation by the DEC of the information contained in Fred C. Hart Associates' May 1988 Site Operations Plan, and subsequent addenda (1 through 4), led to the determination that the treatment area is a potential threat to the environment and public health, and deserves focused attention. The rest of the yard was placed on the registry as a separate site and is the subject of a separate state funded preliminary investigation.

### III. SUMMARY OF REMEDIAL AND FLOATING PRODUCT FIELD INVESTIGATIONS

In November 1989, Fred C. Hart Associates, Inc. completed a Remedial Investigation of the site, and the principal findings are summarized below:

The site was characterized during a Remedial Investigation (RI) conducted by Fred C. Hart Associates, Inc. in the summer of 1989. The wastewater equalization lagoon and pond (hereafter referred to as the lagoon) at the site were estimated to contain approximately 3,757 tons of sludge. It is believed that approximately 214 tons of this sludge contains Polychlorinated Biphenyl (PCB) concentrations in excess of 500 ppm; 1,153 tons of this sludge contains PCB concentrations between 50 and 500 ppm; and the majority of the sludge, 2,390 tons, contains PCB concentrations below 50 ppm. During the Feasibility Study (FS), it was determined that approximately 8,850 tons of soil around the perimeter of and below the lagoon will require remedy. This includes approximately 3,750 tons of surface soil to the depth of two feet around the perimeter of the lagoon which contains PCB concentrations in excess of the Metro-North's proposed and NYSDEC's approved cleanup level of 0.5 mg/kg and 5,100 tons of subsurface perimeter soil with PCB concentrations in excess of 10 mg/kg. The additional 5,100 tons of soil is situated below the lagoon sludge and could possibly exceed the NYSDEC specified PCB cleanup level of 10 mg/kg for subsurface (below 2 feet) soils. However, soils below the sludge were not sampled during the RI. This unlined lagoon poses the potential risk of release into the surrounding soil, groundwater and potentially into the Hudson River, which is 400 feet to the northwest of the site.

In addition to PCBs, during the RI it was determined that volatile organic compounds, semi-volatile organics and metals (inorganics) in the sludge exceeded calculated cleanup levels (see Section VII). The volatile organics include toluene, xylene and ethylbenzene. Semi-volatile organics include fluorene, dibenzofuran, naphthalene, phenanthrene and 1,2-dichlorobenzene. Metals include aluminum, barium, cadmium, copper, iron, lead, manganese and zinc. All of the compounds found in the sludge are traceable to historic operations in and around the Harmon rail yard.

During the RI it was determined that metals and one (1) semi-volatile compound in the site surface soils exceeded calculated cleanup levels. The majority of the metals detected in the site soils fell within typical ranges for natural soils although slightly elevated concentrations were detected for cadmium, copper and magnesium. The semi-volatile organic compound 2-methylnaphthalene was detected at 1.4 mg/kg in one soil sample.

The Old Wastewater Treatment Plant (hereafter referred to as Site Facilities) includes oil skimmer tanks, the sand filter and activated carbon building, concrete coagulation and settling tanks, the pump transfer station, and outdoor sludge drying beds. Quantifiable levels (0.25 mg/kg) of PCBs were detected only at the sludge drying beds. Slightly elevated levels of organic and inorganic compounds were detected in some of the other site facilities. The Endangerment Assessment indicated the site facilities, with the exception of the sludge drying beds, do not pose unacceptable risk levels. The sludge drying beds could potentially present an unacceptable risk to on-site railroad employees or other persons gaining access to the Site.

Nine monitoring wells were also installed around the lagoon during the RI/FS and floating product was found in three of those wells located both upgradient and downgradient of the lagoon. A two-foot thick layer of floating product has accumulated in one of the wells. The floating product from all three (3) wells was tested for PCBs and a concentration of 104 mg/kg PCBs was detected in one well. The other two wells contained no detectable levels of PCBs. The floating

product in these two (2) wells appears to be diesel fuel, based on analytical results. Two additional wells were installed after submittal of the RI to NYSDEC. One of these wells indicated product in excess of two feet in thickness.

#### **IV. INTERIM REMEDIAL ACTION COMPLETED TO DATE**

In February 1991, the recovery of free floating product from three of the monitoring wells was commenced. A suction pump has been installed in each of the wells, and the removal operation is automatically controlled by means of a sensor probe that shuts off the pump when the product drops below a certain level. About 210 gallons of free product have been recovered to date. The high viscosity of the product and physical property of the soil prevents a faster recovery rate. Additional data will be collected during the removal of the contaminated sludge and soil to evaluate possible improvements to the existing interim collection system.

#### **V. ENFORCEMENT STATUS**

Metro-North is under an administrative order to remedy the lagoon in accordance with Article 27, Title 13 of the NYS Environmental Conservation Law. While M-N is contesting this order, it accepts responsibility, as the current operator, for performing site remedial actions.

#### **VI. GOALS FOR THE REMEDIAL ACTION**

- To eliminate the potential for releases of contaminants from the lagoon into the surrounding soil, groundwater and the Hudson River.
- To eliminate risk of direct contact with and ingestion of the PCB contaminated soil and sludge by personnel having access to the site
- To decontaminate portions of the old treatment plant, demolish it, and dispose of the debris.
- To recover floating product if it is encountered during remedial action.
- To comply with Federal and New York State Standards, Criteria and Guidance (SCGs, also referred to as ARARs) which include both those of the State and the United States to the extent that they are more stringent than those of the State.

- . To investigate if there exists residual contamination in the ground-water, surface water, and the Hudson River sediment because of past releases from the lagoon; if it is deemed appropriate, a feasibility study will be conducted, another ROD will be issued, and the necessary remedial actions outlined in the ROD will be implemented.

#### VII. SUMMARY OF RISKS AND SITE CLEANUP LEVELS

The site has been divided into zones which correspond to the pathways by which the lagoon and surrounding soils might impact the public health or the environment. Separate and distinct indicator chemicals and cleanup levels have been developed for each of these zones.

Sludge: The United States Environmental Protection Agency (USEPA) has determined that all of the sludge must be treated as having PCB concentrations in excess of 500 mg/kg as the result of prohibition against dilution in TSCA. Segregation of sludge by PCB concentration or location is therefore not appropriate for purposes of the site remedial actions.

Soil: For purposes of characterizing the potentially affected soil areas and to determine cleanup levels, the soils were separated into the following zones:

Zone A: Zone A soils are those soils, within the top 2 feet of the surface, surrounding the lagoon with concentrations of PCBs in excess of the NYSDEC approved cleanup level of 0.5 mg/kg.

Zone B1: Zone B1 soils are defined as the unsaturated soils beneath Zone A extending down to the groundwater table.

Zone B2: Zone B2 soils are defined as the unsaturated soils beneath the lagoon sludge.

Zone C: Zone C soils are defined as the saturated soils below Zone B2 soils.

The following cleanup levels were established for these soil zones:

- 1) Zone A - NYSDEC has approved a surface soil cleanup level of 0.5 mg/kg PCBs to protect the public health and the environment. The following indicator chemicals and cleanup levels are established for Zone A soil:

Magnesium	6,000 mg/kg
2-Methylnaphthalene	1,849 mg/kg

- 2) Zones B1, B2, & C - NYSDEC has selected a cleanup level of 10 mg/kg PCBs for the Zone B1, B2, and C soils.

For organic compounds detected during the RI, the cleanup levels were determined using the U.S. EPA developed SESOIL computer model. This model computes the maximum concentration of specific compounds at which the leachate from the soil does not cause concentrations of these chemicals in groundwater to exceed the State groundwater standards. Soil cleanup levels for organic compounds of interest are listed below:

<u>Volatile Organics</u> (mg/kg)	<u>Semi-Volatile Organics</u> (mg/kg)
Ethylbenzene . . . . . 0.04	Napthalene . . . . . 0.41
Benzene . . . . . 0.02	1,2-Dichlorobenzene . . . . . 0.51
Toluene . . . . . 0.03	Fluorene . . . . . 1.64
Xylenes . . . . . 0.03	Phenanthrene . . . . . 3.06
Trichloroethene . . . . . 0.02	Fluoranthene . . . . . 8.20
Chlorobenzene . . . . . 0.02	Dibenzofuran . . . . . 2.14
Dichloroethylene . . . . . 0.02	2-Methylnaphthalene . . . . . 1.05
Chloroform . . . . . 0.16	
Tetrachloroethene . . . . . 0.05	
Acetone . . . . . 0.12	

The soil cleanup levels for inorganics (metals) are based on the maximum values reported in the literature for natural occurrence of these compounds in soil.

The following inorganic cleanup levels (mg/kg) for soil medium are established:

Barium . . . . .	100
Cadmium . . . . .	11
Chromium . . . . .	greater than 10 or local background level
Copper . . . . .	700
Lead . . . . .	greater than 32 or local background level
Magnesium . . . . .	6,000
Manganese . . . . .	3,000
Mercury . . . . .	0.3

Based on the data collected during the RI, PCBs, 2-methylnaphthalene and magnesium will be chosen as the indicator parameters for Zone B1.

Site Facilities - The site facilities which will be subject to remedial actions are the lagoon, pond and sludge drying beds which are part of the old wastewater treatment plant. The current operator, M-N, also intends on discontinuing the use of the coagulation and settling tank building and sand filter, and so will demolish them for operational reasons.

These structures, which are components of the Old Wastewater Treatment Plant, are constructed of concrete, wood and metal and will be subject to analysis, cleaning to 10 ug/100 cm<sup>2</sup> of PCBs as measured by the standard wipe test, demolition, and decommissioning as part of the remedial action.

Floating Product - The floating product was detected in three groundwater monitoring wells during the RI. There is a risk for release of this product to the Hudson River. NYSDEC's goal is to collect all free product for off-site treatment. If floating product is encountered during remedial actions, it will be collected and properly disposed. The feasibility of installing a more efficient product recovery system in the lagoon area will be investigated during the remedial actions.

**VIII. SUMMARY OF ALTERNATIVES**

The information presented in the RI and the EA was used to conduct the FS. The FS identifies and evaluates remedial action alternatives to determine the most appropriate way to address chemicals of concern at the site. In accordance with the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) for the selection of Remedial Actions at Inactive Hazardous Waste Sites (HWR-90-4030, Revised May 15, 1990) each alternative was evaluated for the following seven (7) criteria:

- compliance with federal regulations and New York State Standards, Criteria and Guidance (SCGs) (also referred to as ARARs);
- protection of human health and the environment;
- short-term effectiveness;
- long-term effectiveness and permanence;

- reduction of toxicity, mobility and volume;
- implementability; and
- cost.

Community assessment by the public and local towns and agencies other than Metro-North, is evaluated in this Record of Decision (ROD).

The FS evaluated in detail seven (7) alternatives for addressing the site. The Roman numerals assigned to the alternatives in the following discussion match those cited in the FS report prepared by McLaren/Hart. Detailed descriptions of the remedial alternatives can be found in the McLaren/Hart report available at the public review locations.

**ALTERNATIVE I: ON-SITE INCINERATION, STABILIZATION AND ON-SITE DISPOSAL**

Alternative I consists of on-site incineration of sludge and soils exceeding 10 mg/kg of PCBs; stabilization/fixation of incineration residue (if necessary); placement of incineration residue in the remedied lagoon; stabilization/fixation (if necessary) and placement of Zone A soils, greater than 0.5 but less than 10 mg/kg of PCBs, in the remedied lagoon; installing a soil cover over the remedied lagoon; and decommissioning of site facilities. The total cost for this alternative is approximately \$10,128,400.

**ALTERNATIVE II: ON-SITE INCINERATION AND OFF-SITE DISPOSAL**

Alternative II consists of on-site incineration of sludge; off-site disposal of incineration residue and soils exceeding 10 mg/kg of PCBs at a TSCA or RCRA permitted facility; stabilization/fixation (if necessary) and placement of Zone A soils, which exceed the PCB surface soil cleanup level of 0.5 mg/kg, in the remedied lagoon; installing a soil cover over the remedied lagoon; and decommissioning of site facilities. The total cost for this alternative is approximately \$10,752,400.

**ALTERNATIVE III: BIOREMEDIATION, STABILIZATION AND ON-SITE DISPOSAL**

Alternative III consists of on-site bioremediation of sludge and soils exceeding cleanup levels; stabilization/fixation of the bioremediated material; placement

of this bioremediated material back into the lagoon; stabilization/fixation (if necessary) and placement of Zone A soils, which exceed the PCB surface soil cleanup level of 0.5 mg/kg, in the remedied lagoon; installing a soil cover over the remedied lagoon; and decommissioning of site facilities. The total cost for this alternative is approximately \$9,874,400.

**ALTERNATIVE IV: BIOREMEDIATION AND OFF-SITE DISPOSAL**

Alternative IV consists of bioremediation of sludge; off-site disposal of remedied sludge and soils at a TSCA or RCRA permitted facility; stabilization/fixation (if necessary) and placement of Zone A soils, which exceed the PCB surface soil cleanup level of 0.5 mg/kg, in the remedied lagoon; installing a soil cover over the remedial lagoon; and decommissioning of site facilities. The total cost for this alternative is \$11,276,200.

**ALTERNATIVE V: OFF-SITE DISPOSAL**

Alternative V consists of off-site disposal of sludge at a TSCA approved incinerator; off-site disposal of soils exceeding cleanup levels of 10 mg/kg of PCBs at a TSCA or RCRA permitted facility; stabilization/fixation (if necessary) of Zone A soil which exceeds the PCB surface soil cleanup level of 0.5 mg/kg or does not comply with LDR treatment standards, and placement in the remedied lagoon with a minimum of two feet of separation from the high groundwater table surface; installing a soil cover over the remedied lagoon; and decommissioning of site facilities. The total cost for this alternative is \$14,686,400.

**ALTERNATIVE VI: THERMAL VOLATILIZATION, STABILIZATION AND ON-SITE DISPOSAL**

Alternative VI consists of thermal desorption of volatile, semi-volatile and PCB compounds from sludge; off-site disposal of desorbed materials at a TSCA permitted incinerator; on-site disposal of remedied sludge sediment; off-site disposal of soil exceeding 10 mg/kg of PCBs at a TSCA permitted landfill; stabilization/fixation (if necessary) and placement of Zone A soils, which exceed the PCB surface soil cleanup level of 0.5 mg/kg of PCBs, in the remedied lagoon; installing a soil cover over the remedied lagoon; and decommissioning of site facilities. The total cost for this alternative is \$9,555,500.

#### ALTERNATIVE VII: NO ACTION

Alternative VII would entail allowing the PCB contaminated material to remain in place. This does not comply with established ARARs, and does not protect the public health or the environment.

#### IX. COMPARISON OF ALTERNATIVES

A comparison of how the alternatives address the seven (7) evaluation criteria was performed in the FS. This comparison is summarized below. Community assessment is also addressed below. The "no action" alternative (Alternative VII) was not compared since it does not comply with ARARs and does not adequately protect human health and the environment.

##### 1. Compliance with NYS SCGs (ARARs)

The six alternatives (no action alternative excluded) considered for selection as a preferred remedial action alternative were found to comply with NYS SCGs except those related to TSCA as indicated below. The technologies used to develop the alternatives each have the ability to remedy soil and sludge to levels that are protective of groundwater as defined through the SESOIL model and NYS groundwater standards. In addition, the alternatives contained components, such as a cover and relocation and containment of Zone A and Zone B1 (if necessary) soil, that prevent direct contact with, and inhalation and ingestion of site surface soil. Placement and covering of these soils will be performed in compliance with NYSDEC and USEPA regulations. The technologies included in these alternatives have been used successfully at other sites although questions exist with respect to the effectiveness of the three alternatives involving bioremediation and thermal volatilization. Moreover, USEPA has not approved any of the on-site PCB remedial technologies (other than on-site incineration for soils) as methods equivalent to incineration. Therefore, in order to comply with TSCA, extensive permitting, demonstration, and testing would be required prior to implementing bioremediation (Alternatives III and IV) and thermal volatilization (Alternative VII), and to a lesser degree, on-site incineration (Alternatives I & II). The NYSDEC has not permitted any on-

site incinerator to date, but the permitting process may be waived if the technically substantive requirements are met by site and media specific demonstration.

## 2. Overall Protection of Public Health and the Environment

The alternatives evaluated would eliminate the potential contact threat for sludge by treatment or off-site disposal.

The alternatives would also through incineration, bioremediation, thermal volatilization and/or off-site disposal, reduce the concentrations of Site chemicals to levels, based on the SESOIL Model, which would not cause NYS groundwater standards to be violated. As a result, the remedied sludge and soils would not pose an unacceptable risk to public health or groundwater and the potential for releases would be eliminated. These alternatives would also eliminate potential risks to groundwater from inorganic constituents by either: (1) stabilization/fixation of sludge and soils (if needed) for alternatives where ultimate disposal of treated sludge and soil is on-site; or (2) disposal of sludge and soil off-sites, for alternatives where ultimate disposal of sludge and soils is in an off-site TSCA incinerator or permitted waste landfill.

These alternatives would also remedy surface soils containing PCBs in excess of the NYSDEC approved site-specific cleanup level of 0.5 mg/kg for PCBs in surface soil, thus eliminating the potential risks to site workers, or others gaining site access, due to direct contact with, and/or ingestion, or inhalation of, surface soil containing PCBs in excess of 0.5 mg/kg. These alternatives would also eliminate the potential risks to groundwater and to site workers (i.e., direct contact with, ingestion or inhalation of surface soil containing PCBs) from organic compounds and inorganic constituents in Zone A and Zone B1 soil by either off-site disposal or on-site disposal. On-site disposal would consist of stabilization (if required), relocation to the remedied lagoon area, and containment utilizing a soil cover of at least two (2) feet. A minimum of two feet separation between the high groundwater surface and the relocated soil would be maintained.

### 3. Short-Term Effectiveness

There are limited short-term risks associated with the remedial alternatives. Short-term risks can be controlled by standard institutional or engineering controls. Short-term effects could be caused by: air emissions during sludge removal; surface runoff from sludge or soil stockpiles; exposure of personnel working on remedial actions to site contaminants; air emissions from on-site remedial actions; and transportation of site sludge and soils off-site. These risks would be minimized by: covering sludge with water or geomembrane liners; erosion controls; personnel health and safety measures; and air pollution control devices. However, concerns exist with regard to the short-term effectiveness of on-site remedial alternatives, in light of the proximity of the site to an elementary school, public recreational areas, residential buildings, and a commuter railroad station.

### 4. Long-Term Effectiveness and Permanence

Based upon available information, it seems clear that four of the six alternatives would remedy site soil and sludge in accordance with: (1) soil cleanup limits for PCBs and organic compounds that are protective of groundwater; (2) site-specific NYSDEC PCB limits for surface soil; and (3) background concentrations of inorganic constituents, as reported in the literature, in surface soil. The remedied site, then, would pose no potential risks to public health or the environment. The remedies are permanent; that is, the long-term effectiveness of each of the six alternatives is not dependent on future actions. Of the alternatives evaluated, incineration, the primary technology in Alternatives I, II and V, provides the most proven and effective permanent destruction of organic contaminants present at the Site. There would be no residual risk and future controls would be limited to monitoring groundwater to assure NYS standards are not exceeded. Certain questions exist with respect to the effectiveness and implementability of two alternatives involving bioremediation. Bioremediation (Alternatives III and IV) is an emerging technology that has been utilized successfully to remedy contaminated

soil, sludge and liquids. However, effectiveness is very site and compound specific, and would have to be evaluated through extensive bench and pilot scale testing. This testing would have to prove that bioremediation is capable of reducing PCBs to 2 ppm, in accordance with TSCA performance criteria, or such other variance that the USEPA may approve in the context of a completed treatability study or a risk assessment. The time to actually bioremediate site sludge and soils may also be extensive due to limitations in biological processes. Similar issues arise with thermal volatilization while that technology has a good track record, it has not been approved by the USEPA under TSCA and extensive testing would be needed to demonstrate that it could consistently achieve the 2 ppm level required.

#### 5. Reduction of Toxicity, Mobility and Volume

The six remedial alternatives would provide significant reductions of toxicity, mobility and volume of organic compounds in sludge and soils by incineration, bioremediation, thermal volatilization and/or off-site containment in a TSCA or RCRA approved landfill. Of the alternatives evaluated, incineration, the primary technology in Alternatives I, II, and V provides the most significant toxicity and volume reduction for organic contaminants present at the Site. The toxicity and mobility of inorganic compounds in sludge and soil would be significantly reduced through stabilization/fixation (if required) and containment on-site or off-site.

#### 6. Implementability

The six alternatives are implementable at varying degrees. On-site and off-site incineration, the primary technology in Alternatives I, II, and V, and its associated air pollution controls have a proven history of performance for soil. USEPA TSCA has approved several on-site incinerators for PCB disposal. However, compared to other alternatives, incinerators are complicated processes to mobilize and operate.

As noted previously, certain questions exist with respect to the effectiveness and implementability of bioremediation. Bioremediation (Alternatives III and IV) is an emerging technology that has been utilized successfully to remedy contaminated soil, sludge and liquids. However, effectiveness is very site and compound specific. The effectiveness on Site sludge and soils would have to be evaluated through extensive bench and pilot scale testing. This testing would have to prove that bioremediation is capable of reducing PCBs to 2 ppm, in accordance with TSCA performance criteria or such other variance that the EPA may grant in the context of a completed treatability study or a risk assessment. The time to actually bioremediate site sludge and soils may also be extensive due to limitations in biological processes. Public response to bioremediation is uncertain.

Off-Site Disposal, (Alternatives II, IV, and V) of soils is not a complicated measure to implement. There are no technical factors that could interfere with implementation of this alternative. This alternative also does not require extensive permit approvals and could therefore be implemented relatively quickly. The method when applied to untreated waste, however, does not meet the strict definition of permanent remedy.

Thermal Volatilization (Alternative VI) treatment processes and associated air pollution controls also have a proven history of performance. The operation is not as complicated as on-site incineration. However, USEPA has not accepted any of the commercially available thermal volatilization systems as equivalent to incineration in accordance with TSCA. Therefore, extensive bench and pilot demonstration tests would be necessary to prove the system could consistently achieve TSCA's 2 ppm performance criteria, or such other variance that the EPA may grant in the context of a completed treatability study or a risk assessment.

#### 7. Cost

The cost for each alternative was listed in the previous section.

### 3. Community Assessment

The series of public meetings that was held to present the DEC's Proposed Remedial Action Plan (PRAP) drew considerable comments from the public. More than 100 people attended the February 27, 1992 Public Information Meeting; about 500 people participated at the April 23, 1992 Public Forum sponsored by the League of Women Voters; more than 200 local citizens and elected officials participated in the May 6, 1992 Public Availability Session. The public and the elected officials were overwhelmingly opposed to on-site incineration. There was some support for conducting further study on innovative technologies other than incineration. The opposition stemmed primarily from the fact that residences, an elementary school, public recreational areas and a commuter railroad station are in close proximity to the site.

## X. SELECTED REMEDIAL ACTION

The DEC has selected Alternative V, the off-site incineration and off-site land disposal option. Remediation of the lagoon, pond and contaminated components of the wastewater treatment plant has been identified as Operable Unit 1.

Completion of Operable Unit 2: The Operable Unit 2 will include investigation into possible impacts of past releases from the Old Wastewater Treatment Plant and the lagoon on the groundwater, surface water, and Hudson River sediment contamination. If after investigation, it is deemed appropriate, a Feasibility Study will be conducted, another ROD will be issued with respect to Operable Unit 2, and the necessary remedial actions outlined in the ROD will be implemented.

## XI. RATIONALE FOR SELECTION

From a scientific and technical perspective, incineration of PCB wastes with the use of the best available pollution control equipment is the most effective technique. On-site incineration would have been an appropriate, cost-effective technical solution to the problem. On-site incineration of PCB contaminated soil and sludge has been used effectively at a number of sites across the country, but not necessarily in a setting such as Croton.

In seeking to identify the best alternative, the Department balanced all the factors and gave serious consideration to the overwhelming opposition and concerns expressed by citizens of Croton, residents of Halfmoon Bay Condominium, the children at St. Augustine's school and to the pleas from elected officials. Off-site incineration and off-site land disposal alternative is selected for the following reasons:

- It is the quickest effective solution to the problem of removing 2,500 tons of PCB-laden sludge from the lagoon and preventing migration of PCBs from the lagoon into the environment. It is routinely used by generators of hazardous waste in compliance with RCRA and TSCA.
- It allows Metro-North and DEC to begin promptly the investigation of possible off-site impacts from the lagoon. Carrying out the necessary site-specific health risk assessment and responding to public concerns in an atmosphere of widespread public opposition would delay remediation and draw limited resources from the primary objective -- cleaning up the entire PCB problem at Harmon Yard and other sites in the State -- including the suspected contamination of groundwater which discharges to the Hudson River.

Pursuant to CERCLA, as amended, and DEC's Technical and Administrative Guidance Memorandum (TAGM) for the Selection of Remedial Actions at Inactive Hazardous Waste Sites, DEC must select remedies that: are protective of human health and the environment; attain ARARs and SCGs; are cost effective; utilize permanent solutions and alternate treatment technologies to the extent practicable; reduces mobility, toxicity, or volume of waste by treatment; are implementable; achieve short-term and long-term effectiveness and have public acceptance. The following sections describe how the selected remedy compares to these criteria.

#### Protectiveness

The selected remedy provides significant protection of human health and the environment by effectively mitigating the source of contamination. The principal threats at the Site are contact with contaminated material and impacts to the surrounding environment, groundwater and the Hudson River. The contact hazard

will be eliminated by removing all the sludge from the lagoon. Furthermore, contact with surface soils above 0.5 mg/kg PCBs will be eliminated by relocating these soils to the remedied lagoon area and covering them with at least two (2) feet of soil. Contact with potentially contaminated equipment will be eliminated by decommissioning the site facilities. Those threats to the surrounding environment consists mainly of a threat to groundwater, and the possibility of further soil contamination due to the lagoon overflowing during heavy rain events and the possibility of contamination migration to the Hudson River. These threats will be eliminated by: (i) removing contaminant sources and filling the lagoon to grade with clean soil; (ii) removing the source material (sludge and soils) with contaminant concentrations that could cause groundwater to be affected; and (iii) recovering floating products to the extent practical to further eliminate the potential threat to groundwater.

Alternative V consists of off-site incineration of sludge and off-site land disposal of contaminated soil. TSCA permitting process and oversight of the operations of PCB incinerators and chemical waste landfills are designed to provide protection to public health and the environment. These disposal options are routinely exercised by generators of hazardous waste in compliance with the Resource Conservation and Recovery Act (RCRA).

#### Compliance with New York State SCGs (ARARs)

SCGs, also referred to as ARARs, relate to those Federal and State laws, regulations and policies considered in evaluating remedial alternatives can be classified as: action specific, chemical specific and location specific.

Action specific SCGs/ARARs pertain to meeting the requirements for the enactment of the remedial action. The appropriate requirements of the Toxic Substances Control Act (TSCA), the Resource Conservation and Recovery Act (RCRA) and New York hazardous waste regulations will be followed during the remedial action. All staging and testing areas constructed on-site will comply with the current TSCA (40 CFR 761.65), RCRA (40 CFR Part 264.14, 40 CFR Part 264.17, 40 CFR Part 264.31, 40 CFR Part 264.33, 40 CFR Part 264.114, 40 CFR Part 264.193, et. al.), and New York hazardous waste standards.

Chemical specific SCGs/ARARs refers to cleanup levels for media of concern. DEC has established specific cleanup levels for Site soils. The selected remedy will comply with the surface soil cleanup levels by excavating, stabilizing (if necessary) and covering Zone A soils with at least 2 feet of soil. A minimum of two feet of cover between the high groundwater surface and the relocated soil will be maintained. The recommended remedy will comply with subsurface soil cleanup levels by excavation and off-site disposal of soils exceeding these levels.

Location specific SCGs/ARARs pertain to the potential impacts of the remedial actions on specific land classifications. The Site is not in a floodplain or within 100 feet of a mapped wetland. Furthermore, based on the NYS Wild, Scenic and Recreational River System Act (March 1985), the Site is not adjacent to a wild, scenic or recreational portion of the Hudson River. The Site does lie within the Hudson Riverfront section of the coastal zone boundary as designated by the New York State Department of State (NYS DOS). The selected remedy is consistent with the policy of the New York State Department of State's Coastal Zone Management Program. While parts of Croton Point have been mapped as areas of archeological significance, the proposed remedial work will be conducted in areas which have been disturbed by excavation and construction during at least the past fifty years. Based on this information, there are no location-specific SCGs/ARARs designated for remedial actions at the Site.

#### Cost Effectiveness

Alternatives I, II, III, IV, and VI would offer considerable cost savings over Alternative V. However, Alternatives III, IV and VI have not yet been proven consistently effective and acceptable under TSCA. Therefore, extensive treatability studies and demonstrations would be required before remediation could begin. In addition, the public was overwhelmingly opposed to on-site remedial alternatives in light of the proximity of residences, an elementary school, public recreational areas and a commuter railroad station to the site. Carrying out the necessary site-specific health risk assessment to determine short-term and long-term effectiveness of on-site remedial alternatives in an atmosphere of widespread public opposition would result in an unacceptable delay

in remediation and draw limited resources from the primary objective of cleaning up the PCB problem at Harmon Yard and other sites in the State. For these reasons, it is determined that the final cost of on-site remedial alternatives would approach the cost of Alternative V and hence, Alternative V is determined to be cost-effective.

#### Utilization of Permanent Solutions and Alternative Treatment Technologies to Reduce Toxicity, Mobility and Volume

The incineration of the sludge will permanently reduce the toxicity of sludge by breaking down PCB and other hazardous organic waste into less toxic substances.

#### Implementability

Alternative V is the most implementable of the alternatives evaluated. This remedy utilizes well proven off-site treatment and disposal methods for sludge and soils. Implementing this alternative can be accomplished relatively quickly. The local community has expressed strong support for this option, and is overwhelmingly opposed to on-site incineration and the remaining options that require on-site treatment and/or disposal. On-site alternatives other than incineration are not TSCA approved and therefore, extensive treatability studies and demonstrations would be necessary to prove that the system could consistently achieve TSCA's 2 ppm performance criteria or such other variance that USEPA may grant in the context of a completed demonstration or a risk assessment.

#### Short-Term and Long-Term Effectiveness

The selected remedy achieves the best short-term effectiveness for the Site. The remedy can achieve cleanup goals quicker than the other alternatives, and with comparably little impact to the local community health and the environment. Long-term effectiveness is not a consideration because the remedy calls for off-site disposal of waste.

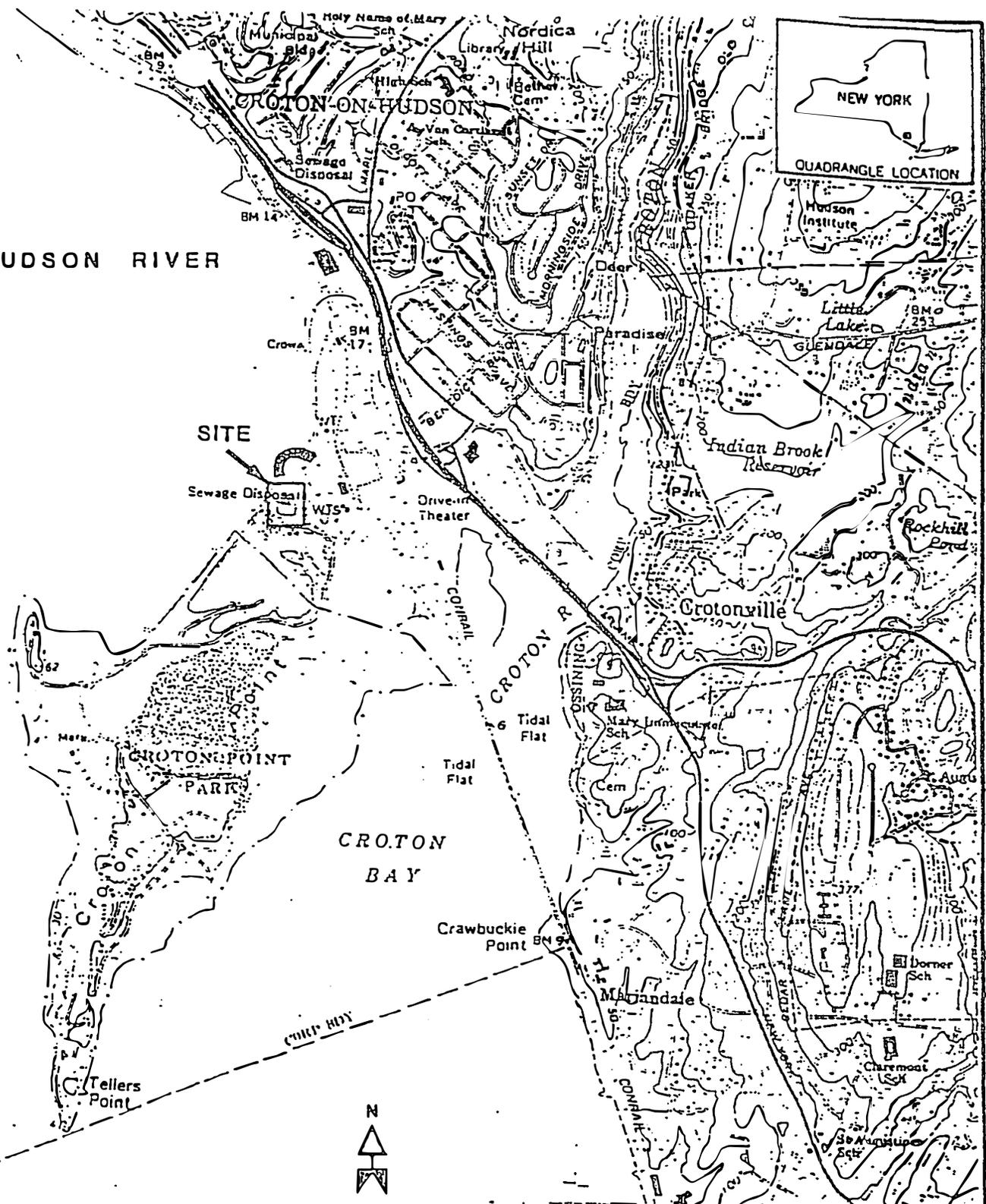
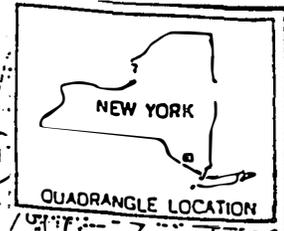
### **XII. POST CLOSURE MONITORING**

After the removal of the sludge and soil, the existing groundwater monitoring wells will be sampled periodically to evaluate groundwater quality after closure of the lagoon. Monitoring reports will be submitted by Metro-North to NYSDEC.

APPENDIX A  
LIST OF FIGURES

HUDSON RIVER

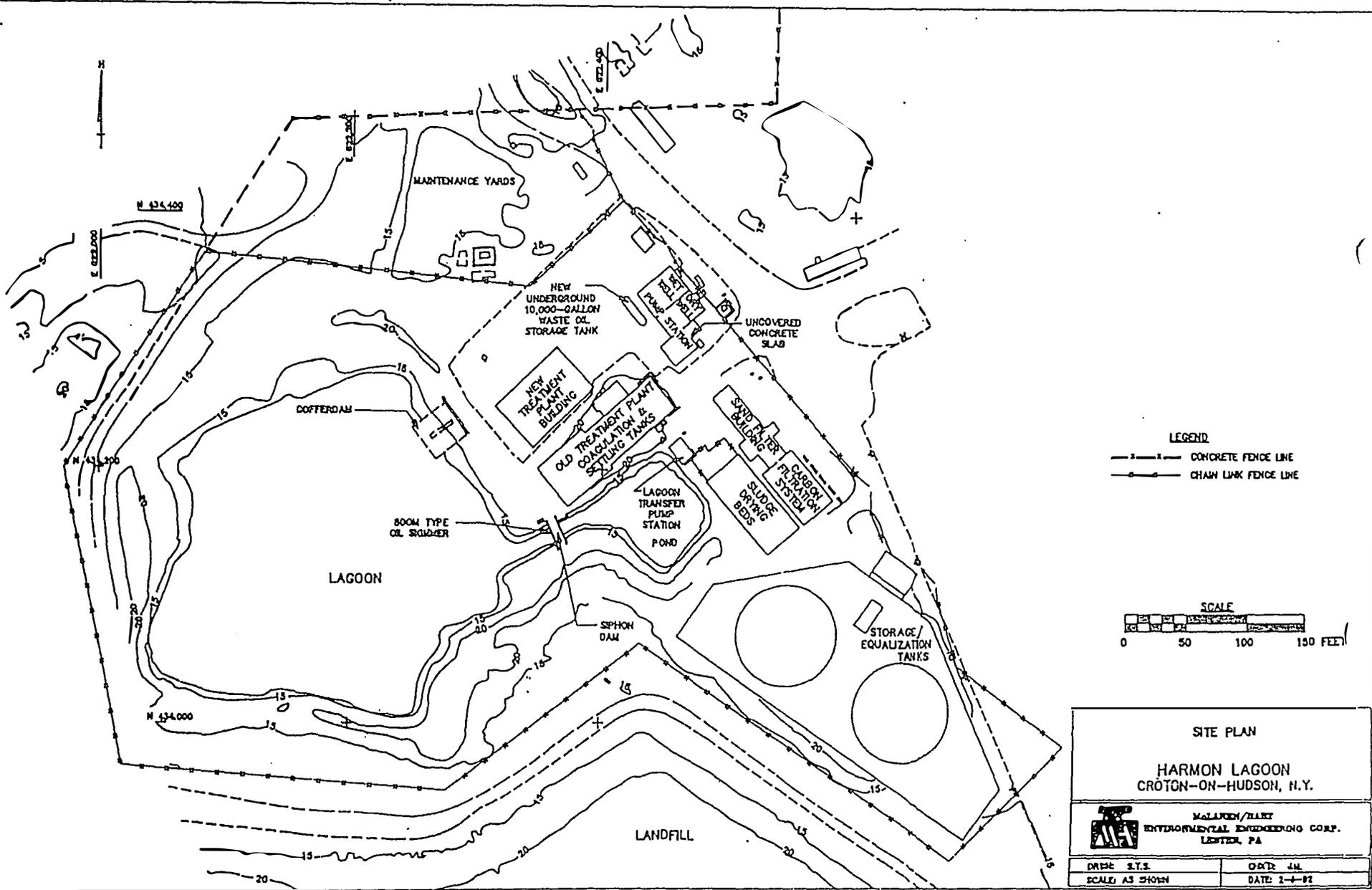
SITE



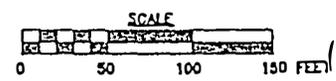
**SITE LOCATION MAP**  
**HARMON LAGOON**  
**CROTON-ON-HUDSON, NEW YORK**

**SOURCE:**  
USGS Topographic Quadrangles 7.5 Minute Series  
-Haverstraw 1967, Photorevised 1979  
-Ossining 1967, Photorevised 1979

 **McLAREN/HART**  
**ENVIRONMENTAL ENGINEERING CORP**  
LESTER, PA



**LEGEND**  
 --- CONCRETE FENCE LINE  
 --- CHAIN LINK FENCE LINE



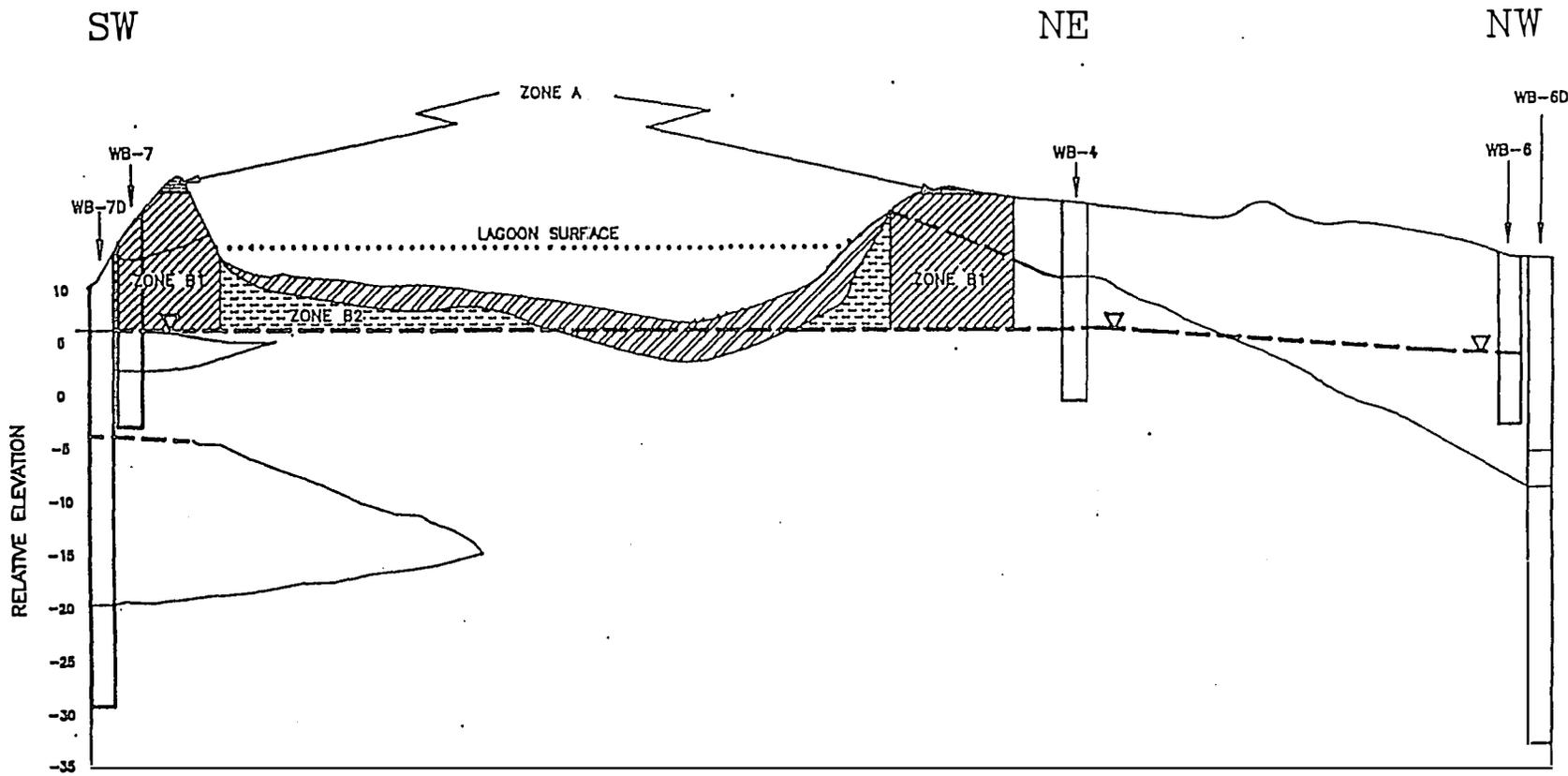
**SITE PLAN**

**HARMON LAGOON**  
 CROTON-ON-HUDSON, N.Y.

**McLAREN/HART**  
 ENVIRONMENTAL ENGINEERING CORP.  
 LEBANON, PA

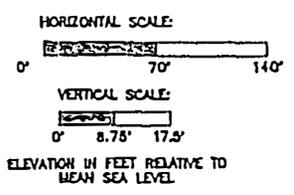
DRAWN BY: S.T.S.	CHECKED BY: J.M.
SCALE: AS SHOWN	DATE: 2-4-82

A-3

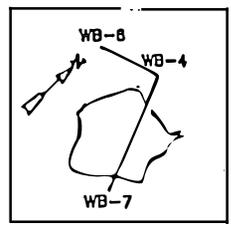


**LEGEND**

-  LAGOON SLUDGE
-  ZONE A 0-2' INTERVAL
-  ZONE B1 UNSATURATED SOIL SURROUNDING LAGOON
-  ZONE B2 UNSATURATED SOIL BELOW LAGOON
-  WATER TABLE
-  INFERRED CONTACT



**LOCATION OF SECTION**

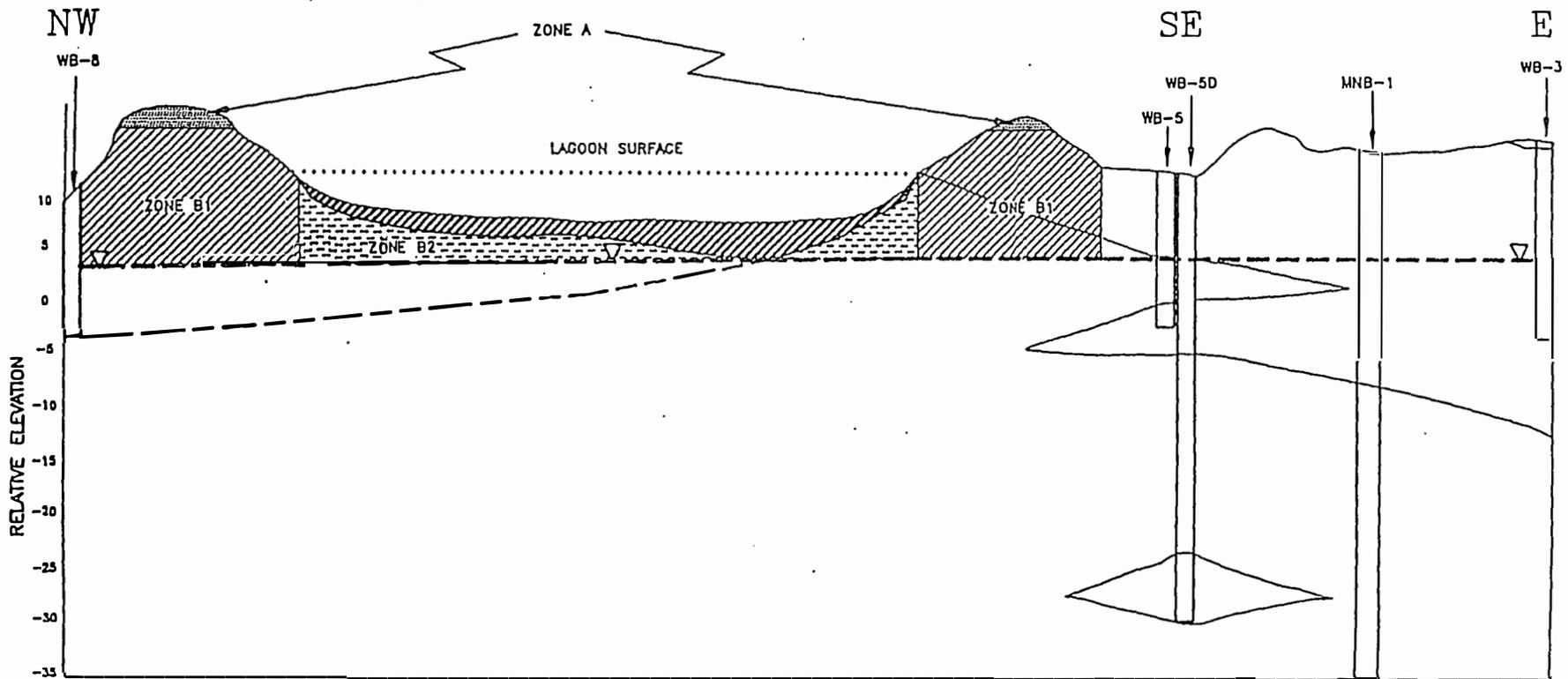


N-S PROPOSED LIMITS OF UNSATURATED SOIL IN ZONES B1 AND B2

**HARMON LAGOON**  
CROTON-ON-HUDSON, NEW YORK



McLAREN/HART  
ENVIRONMENTAL ENGINEERING CORP.  
LESTER, PA



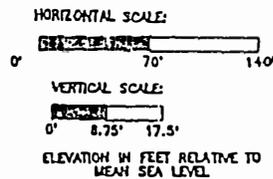
**LEGEND**

-  LAGOON SLUDGE
-  ZONE A 0-2' INTERVAL
-  ZONE B1 UNSATURATED SOIL SURROUNDING LAGOON
-  ZONE B2 UNSATURATED SOIL BELOW LAGOON

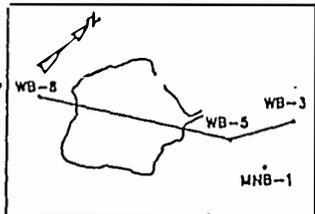
 WATER TABLE

 INFERRED CONTACT

**APPROXIMATE SCALE**



**LOCATION OF CROSS SECTION**

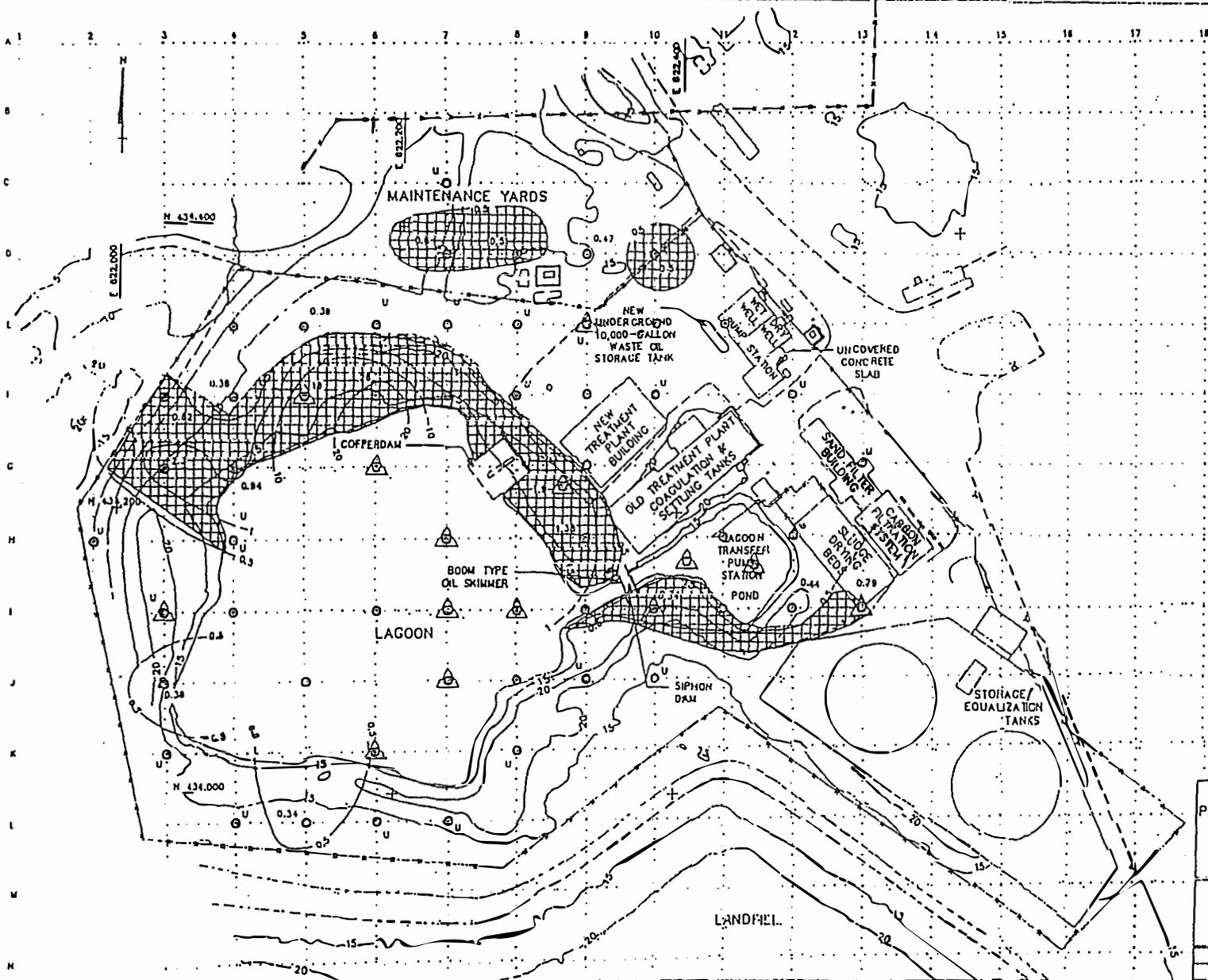


E-W PROPOSED LIMITS OF UNSATURATED SOIL IN ZONES B1 AND B2

**HARMON LAGOON**  
 CROTON-ON-HUDSON, NEW YORK



McLAREN/HART  
 ENVIRONMENTAL ENGINEERING CORP.  
 LESTER, PA



- LEGEND**
- CONCRETE FENCE LINE
  - - - CHAIN LINK FENCE LINE
  - ⊙ SAMPLE LOCATIONS (PCB/PEST)
  - △ SAMPLE LOCATIONS (FULL TCL)
  - 0.10 PCB ISOCONCENTRATION LINE
  - ▨ PROPOSED LIMITS OF EXCAVATION



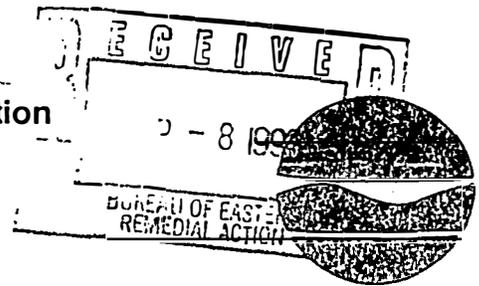
PROPOSED LIMITS OF UNSATURATED SOIL IN  
 ZONE A  
 HARMON LAGOON  
 CROTON-ON-HUDSON, N.Y.

McLAREN/HART  
 ENVIRONMENTAL ENGINEERING CORP.  
 LESTER, PA

DRWN: S.T.S.	CHKD: J.M.
SCALE: AS SHOWN	DATE: 2-6-92

APPENDIX B  
RESPONSIVENESS SUMMARY

New York State Department of Environmental Conservation  
Region 3  
21 South Putt Corners Road  
New Paltz, NY 12561-1696  
914-255-5453



R E S P O N S I V E N E S S   S U M M A R Y

For Comments on the Harmon Railroad Yard Wastewater Lagoon  
Inactive Hazardous Waste Disposal Site (360010)

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**INTRODUCTION:**

The New York State Department of Environmental Conservation (DEC) and the New York State Department of Health (DOH) held a public meeting for the Harmon Railroad Yard Wastewater Lagoon Inactive Hazardous Waste Disposal Site (ID#360010) on February 27, 1992 at the Village of Croton Municipal Building. The following representatives of DEC, DOH and the Westchester County Department of Health conducted the meeting:

- Ramanand Pergadia - Project Manager, Hazardous Waste Remediation, DEC, Region 3
- Erin O'Dell - Citizen Participation Specialist, DEC Region 3
- G. Anders Carlson - Environmental Exposure Investigation, DOH
- Mark Van Valkenburg - Project Manager, Environmental Exposure Investigation, DOH
- Elizabeth Hendricks- Westchester County Department of Health

More than 100 citizens and elected officials attended this meeting.

**PURPOSE OF THE MEETING:**

The purpose of the meeting was to report to the public and receive comments on the results of a Remedial Investigation/ Feasibility Study (RI/FS) and DEC's Proposed Remedial Action Plan (PRAP) for the Harmon Railroad Yard Wastewater Lagoon site. The public meeting was held during a 30-day public comment period on the PRAP. The remedial alternative selected in the PRAP included on-site incineration of the PCB contaminated lagoon sludge and soils exceeding cleanup levels (Alternative I)t

**PUBLIC RESPONSE:**

The public response to the PRAP during the meeting was strongly negative. Questions were raised concerning health and environmental impacts, technical feasibility and cost of the proposed remediation plan. After stating that adequate public notice was not given concerning the meeting, the public,

Summary Cont'd  
#360010

including the Westchester County League of Women's Voters (LWV), requested another public meeting and an extension of the 30-day comment period.

The public opposition to the PRAP continued after the public meeting. DEC and DOH received numerous letters from the public requesting the consideration of different remedial alternatives. The letters also requested an additional public meeting and an extension of the 30-day comment period.

**ADDITIONAL PUBLIC INVOLVEMENT:**

In response to the requests made at the meeting and in subsequent letters, DEC extended the public comment period by 60 days. During the comment period, DEC and DOH received hundreds of letters, telephone calls and petition signatures protesting the remedial action selected in the PRAP. DEC and DOH attended two additional public information meetings -- a forum sponsored by the LWV and an availability session sponsored by DEC and DOH.

The forum, held on April 23, 1992 at the Ossining High School, included a debate on the PRAP with the following participants:

Ralph Manna - Regional Director, DEC, Region 3  
Dr. John Hawley - Research Director, DOH  
David Lipsky - Independent Toxicologist, Dynamac Corp.  
Seth Davis - Attorney, Croton Ad-Hoc Committee  
Bridget Barclay - Hudson River Clearwater Sloop

After the debate, the public was given an opportunity to voice their concerns and questions. Questions were asked regarding the health and environmental impacts of the proposed alternative. More than 500 people attended the forum.

The availability session, held at the Croton Municipal Building on May 6, 1992, provided an opportunity for the public to ask questions of DEC and DOH technical staff in an informal, one-on-one setting. Approximately 200 people attended the availability session.

**DEC/DOH RESPONSE TO PUBLIC COMMENTS:**

DEC, in consultation with DOH, selects a proposed remedial action by balancing various evaluation criteria such as protection of human health and the environment, compliance with State standards and criteria set for the site, cost effectiveness, state and community assessment and technological feasibility. Based on the comments and concerns expressed by the

Summary Cont'd  
360010

public, serious consideration was given to whether Alternative I (on-site incineration) provided the best balance of selection criteria

On June 30, 1992, DEC Commissioner Thomas C. Jorling announced his decision to excavate the contaminated sludge and soil for off-site incineration and land burial. While Commissioner Jorling noted that "on-site incineration would have been an appropriate technical solution," the removal of the contaminated sludge and soil was selected because:

- o It is the quickest effective solution to the problem of removing 2,500 tons of PCB-laden sludge and preventing migration of PCBs from the lagoon into the environment.
- o It allows Metro-North and DEC to promptly begin investigating possible off-site impacts from the lagoon. Conducting the necessary site-specific health risk assessment for on-site incineration and responding to public concerns in an atmosphere of widespread public opposition could delay remediation and draw limited staff resources from their primary responsibilities -- cleaning up the entire PCB problem at the Harmon Yard site and other sites in the State -- including the suspected contamination of groundwater which discharges to the Hudson River.

#### **QUESTIONS AND RESPONSES**

During the 90 day comment period and the various public meetings, DEC and DOH received hundreds of comments and questions from concerned area citizens, residents of Half Moon Bay Condominiums, the students at St. Augustine's school and many community leaders and elected representatives. The majority of the questions and comments focused on the technology of mobile incineration and the impacts of this technology on human health and the environment. Attachment 1 summarizes the major issues that were raised by the public concerning mobile incineration technology. If on-site incineration was selected, a site-specific health risk assessment and a trial burn would have been conducted that would answer these questions. However, with the decision to excavate and remove the sludge and soil off-site, this summary will not address these issues.

In addition to questions about mobile incineration technology and its impacts, the following issues were raised during the comment period:

**Issue:** A health risk assessment should be performed on all remedial alternatives. The alternative with the minimum impact should be selected as the final remedial

Summary Conttd  
360010

action. The final remedial action should not be selected without further investigation.

**Response:** Additional investigations, such as detailed health risk assessments for each alternative, would not be necessary since the selected remedy is adequately protective of public health and the environment.

**Issue:** The PCB contamination at the lagoon should be handled on-site rather than passing the problem (and Incineration) to another community. On-site solutions such as bioremediation should be thoroughly explored.

**Response:** The United States Environmental Protection Agency (EPA) mandates that disposal options for PCB contamination greater than 500 parts per million (ppm) are limited to incineration or an alternative treatment method that achieves a standard of performance equal to incineration. DEC considered using an alternative technology such as bioremediation but determined that long and costly "treatability studies" would be necessary to prove that these technologies would perform as well as incineration. In addition, there would be no guarantee that the technologies would be viable for the site. These studies could cause substantial delays in the remediation of the site.

**Issue:** Hudson River Clearwater Sloop advocated placing the contaminated sludge and soil in an above-ground containment structure until adequate technology for PCB remediation was developed. Was this alternative considered?

**Response:** Given the EPA mandate governing PCB disposal options (as noted above), it is unlikely that the EPA would approve "temporary" storage of PCB-contaminated wastes on-site. Furthermore, it would cost several million dollars to design, construct and maintain the "temporary" storage facility. This cost would be in addition to the several million dollars necessary to ultimately dispose of and/or treat the wastes.

ATTACHMENT 1:  
ISSUES IDENTIFIED DURING PUBLIC COMMENT PERIOD  
HARMON RAILROAD YARD WASTE WATER LAGOON SITE (#360010)

HEALTH

- There is a large population in a relatively small geographic location (Croton and Ossining)t Any adverse health impacts from the incinerator could affect a large number of people, including nearby school children and residents of the Half-Moon Bay Condominiumst
- There were no health studies conducted at the site prior to the selection of a remedial alternative.
- The combined health effects from the incinerator, Charles Point, Peekskill and Ossining sewage treatment plants, Haverstraw power plant, Indian Point nuclear power plant, Sprout Brook ash pit and Croton Landfill needs to be addressed.
- A health risk assessment conducted after the selection of a remedial alternative implies a commitment to that alternative; the alternative will not be abandoned regardless of the results of the risk assessment.
- A risk assessment may not be able to predict the long and short-term effects of unidentified incineration by-productst
- There should be a study to compare the impacts from the site and the incinerator to determine which will have the greatest health impact.

INCINERATIONtTECHNOLOGY

- Mobile incineration technology is unproven. It has not been used in New York State and Croton was chosen as the "guinea pig" testing ground.
- The effect of incineration on the metals in the sludge and soil needs to be determined.
- Daily operation of the incinerator will have an unknown impact on such things as noise and dust levels in the areat

ATTACHMENT 1 CONT'D:  
ISSUES IDENTIFIED DURING PUBLIC COMMENT PERIOD  
HARMON RAILROAD YARD WASTE WATER LAGOON SITE (#360010)

- The performance standard set for an incinerator is an ideal, not a reality. There is a large margin for error in the calculations used to demonstrate an incinerator's efficiency. This does not account for fugitive emissions, toxics remaining in the soil, etc.
- The breakdown products of the incineration and their toxicity have not been determined.
- The operation of this incinerator should be compared to other sites where this technology is being used.
- DEC did not provide any information on the specific mobile incinerator that is to be used at the site. There should be specific information known about the incinerator before this alternative is chosen.
- What actions will be taken in case of emergencies/failures such as those that occurred at the incinerator in Goose Bay, Canada.

B-6

OTHER ISSUES

- The incinerator will lower property values
- The incinerator may become permanent and be used to burn PCB contamination from other sites in New York. Assurances must be provided that DEC will not bring wastes from other areas to burn at the Croton incinerator.
- The use of an incinerator is not consistent with the local waterfront revitalization plan for Croton.

Summary Cont'd  
#360010

HARMON RAILROAD YARD  
WASTEWATER EQUALIZATION LAGOON  
AND  
OLD TREATMENT PLANT (I.D. #360010)  
CROTON-ON-HUDSON, WESTCHESTER COUNTY

Summary of Major Comments and Responses

- C: Does NYSDEC plan to bring hazardous waste from other facilities or hazardous waste sites for incinerating at the Harmon Railroad Yard site?
- R: No. Waste material from other sites or facilities will not be destroyed by on-site incineration. Should on-site incineration remain as the remedial action, only PCB sludges and PCB soil in and around the Metro-North lagoon site (I.D. 360010) will be destroyed by the on-site incinerator.
- C: How could NYSDEC select on-site incineration without knowing that the public health risk will be "acceptable"? What will NYSDEC do if the risk assessment is not within "acceptable" limits? What will NYSDEC do if the trial burn results do not meet the TSCA permit requirements or substantive requirements of the NYSDEC's air and RCRA permits?
- R: NYS has proposed to implement the on-site incineration remedy with the understanding that it will meet all air emission and health exposure requirements. In order to assure that is the case, Metro-North will be required to perform a full health risk assessment should on-site incineration remains as the remedy. The draft work plan and scope of the risk assessment will be presented to the public seeking their input before it is started. The final risk assessment will also be presented to the public for their review and comment. If the risk assessment outcome is not acceptable to NYSDOH and NYSDEC, on-site incineration will not be utilized to remediate the site. To be acceptable the risk assessment must show that on-site incineration would meet all health exposure requirements. As indicated in earlier meetings, a trial burn will be performed and the results will be analyzed and shared with the public. If NYSDEC/NYSDOH feel that on-site incineration is no longer viable, it will be terminated and another alternative will be implemented.
- C: Will this incinerator be running 24 hours a day? How much noise will there be and what kind of smells will be produced? What happens to the water that is used in this cleaning process? How much PCB dust will be airborne when the material is lifted into the incinerator and removed from it?
- R: This kind of incineration is efficient running 24 hours a day, though it can be operated for shorter periods of time. If a shorter daily operating period is used, whether for technical or other reasons, it would be less efficient and the overall remedial process will take longer. Noise levels from most mobile incineration units should not be noticeable beyond a

distance of 400 feet when the unit is operating, but the noise level in the immediate vicinity of the incineration unit will require ear protection for on-site personnel. Water used in the cleanup process, whether from the incinerator or other site-related activities, will be treated in Metro-North's wastewater treatment plant which is specially designed to treat PCBs. All wastewater treatment and discharge is controlled and monitored under an existing permit from the NYSDEC. Among other sources, contaminated water will come from general operation of the incinerator and dewatering sludge and soil prior to incineration. A Comprehensive Worker and Community Health and Safety Plan will be developed and will include requirements for controlling dust during all aspects of the project. We do not know now if there is anything in the sludge that would cause offensive odors during incineration. This is a concern that would be evaluated during design and required test burns.

C: The health effects of around 340 lbs. of lead being emitted at this incineration site is unacceptable. Lead and cadmium are non-volatile elements and will settle and remain in the community for many years.

R: The "estimate" that 340 lbs. of lead will be emitted from the incinerator during remediation is too high. This was based on controlling 90% of the metals emissions. In actuality, the air pollution control equipment will exceed 90% collection efficiency for metals. Among others, any incinerator used at this site will have to meet the requirements of the U.S. Environmental Protection Agency's Resource Conservation and Recovery Act (RCRA). RCRA requires that a risk assessment must also be conducted for all metals, including lead and cadmium emissions. NYSDEC and NYSDOH staff will work closely with the public on all aspects of remediation including designing locations and methods/frequency of air monitoring, and any contingency plan necessary to assure the public health is protected during the remediation of the lagoon.

C: Even if you can convince us that the incineration is safe, who is going to monitor?

R: A consultant approved by the State, and who specializes in air quality modeling and monitoring will be hired to design and oversee the operation of all monitoring activities. Continuous and periodic monitoring of several air quality parameters such as combustion control parameters, carbon monoxide, metals, hydrocarbons, hydrogen chloride and PCBs will be conducted. All air quality monitoring will be carried out under NYSDEC's oversight.

C: Incineration does not treat heavy metals and vast amounts of lead and other poisonous metals would remain as molten material to be buried on-site. This site does not qualify as a garbage landfill, yet NYSDEC is going to use it for toxics, without a liner, and within 100 feet of the Hudson River.

- R: It is true that most of the metals would be retained in the incinerated ash residue in fact that would be a goal of the emission controls. In order to make the metals unavailable for leaching into the environment, the residue will be stabilized, using a proven and widely used technology before replacing it in the remediated lagoon. The stabilized residue will be tested using State or Federal toxicity leaching tests. If the residue fails any of the tests for the toxic metals, it will be disposed in an off-site landfill: Only non-hazardous material will be disposed in the remediated lagoon. The stabilized residue will be placed back into the remediated lagoon on top of a clay liner at least two feet thick. These measures will protect the groundwater and prevent leaching of metals.
- C: Loss of power, loss of induced draft, excessive built-up pressure in the combustion chamber and high temperatures in the quench chamber are possible upset conditions. Although these conditions may not occur frequently, there is a concern that any emissions that are unexpectedly released could harm both remediation personnel and residents in the vicinity.
- R: Yes, though improbable, it is possible for upset conditions to occur. Stack emissions from the worst of these upset conditions will be taken into account in performing the human health risk assessment and air quality modelling. Appropriate contingency plans will be developed and put in place prior to the mobilization of the incineration unit. The incinerator will also be required to have controls that will automatically shut it down if there is an upset.
- C: Who will have the authority to halt the process if the environmental emissions exceed standards, and the process is determined to be hazardous to neighboring communities?
- R: Prior to the mobilization of the incineration unit, "trigger" levels or monitoring criteria operating conditions and emissions of metals, PCBs and other constituents will be established. The on-site health and safety officer and the engineering consultant hired to oversee the operation of the incinerator will have the authority to shut down the operation. After the shut down, the whole incineration system will be checked and tested before it is re-started. If the incineration unit fails to meet the established performance and regulatory standards, the Division of Hazardous Waste Remediation will re-evaluate the continued use of that incineration unit.
- C: There are no provisions reported in the Feasibility Study to address the necessary further study of existing or suspected contamination attributable to the lagoon facility beyond the Metro-North property limits. Groundwater contaminants at this facility have not been tested below a depth of 40 or 50 feet. Addressing this information need would likely warrant consideration of additional groundwater investigation and other types of cleanup measures.

R: The Proposed Remedial Action Plan for the Harmon Yard Lagoon presented at the February 27, 1992 public meeting discussed a remedy to remove a major source of PCB contamination, thereby greatly reducing the public health and environmental threat. By no means was this meant to be the final remedy. Shortly, a detailed Remedial Investigation will be conducted by Metro-North to assess any impacts to the groundwater, Hudson River surface water and sediments and any off-site contamination. Once the detailed work plan is drafted, we will share that information with the public and solicit public input. We welcome your comments and suggestions.

C: The NYSDEC representative at the February 27th hearing also mentioned "in passing" that a separate State-funded investigation is in its "advanced stages" on other parts of the Metro-North site. It sounded very much like a "different agency" investigation, with no coordination between the Lagoon Study and this "other" process.

If multiple types of contamination exist on the same site and if these other problems also require remediation and if pooling the data and remediation process could expedite the cleanup...why does it sound like you people are not talking to each other? Or am I incorrect in what I thought I heard?

R: Metro-North is a large facility with challenging environmental problems involving several Divisions within the Department. Recently the Department has initiated a multi-media approach in an effort to coordinate all ongoing and future remedial actions at the site. This will assure better enforcement of Metro-North's environmental activities.

C: State agencies, including MTA, which directly undertake actions in the coastal area are required to conduct activities in a manner which is consistent with the coastal area policies of any approved local water front revitalization program. Has NYSDEC reviewed their activities for consistency with the coastal area policies?

R: The regulations promulgated pursuant to the Article 19 NYCRR, Part 600 provide that only those state agency actions which are classified as Type I or "unlisted" pursuant to the State Environmental Quality Review Act (SEQRA) are subject to consistency review. However, administrative enforcement actions, such as those involving the remediation of the inactive hazardous waste site at Croton lagoon, are considered to be "exempt" actions under SEQRA (6 NYCRR 617.2(q)) and are therefore not reviewable for consistency. Both NYSDEC and MTA are covered by this exemption. In addition, the proposed remedial action greatly reduces the existing environmental/public health threat, which would enhance the coastal area.

C: The cost of all property in the area is bound to fall

R: The proposed remedy is short term and expected to take only 6 to 12 months for completion. Once the remedy is completed, it will eliminate or greatly reduce hazardous materials from the site. The remediation will ultimately improve the environmental and public health aspects of the community.

APPENDIX C

LISTING OF DOCUMENTS IN THE ADMINISTRATIVE RECORD

EXHIBIT A

ADMINISTRATIVE DOCUMENTS AND COMMUNITY ROLE IN THE SELECTION PROCESS

The following primary administrative documents are part of the Administrative Record.

- "Remedial Investigation Report, Harmon Lagoon, Croton-on-Hudson, New York," prepared by Fred C. Hart Associates, Inc.; November 27, 1989 and Addendae
- "Feasibility Study, Harmon Lagoon, Croton-on-Hudson, New York," prepared by McLaren/Hart Environmental Engineering Corporation; November 1990.
- "Feasibility Study, Harmon Lagoon, Croton-on-Hudson, New York." prepared by McLaren/Hart Environmental Engineering Corporation; Revised, February 1992.
- "Endangerment Assessment, Harmon Lagoon, Croton-on-Hudson, New York," prepared by Fred C. Hart Associates, Inc.; December 28, 1989.
- "Site Operations Plan, Harmon Lagoon, Croton-on-Hudson, New York," prepared by Fred C. Hart Associates, Inc.; May 1988 with Addenda 1 through 4.
- "Product Investigation Report, Harmony Lagoon, Croton-on-Hudson, New York," prepared by Fred C. Hart Associates, Inc.; November 20, 1990e