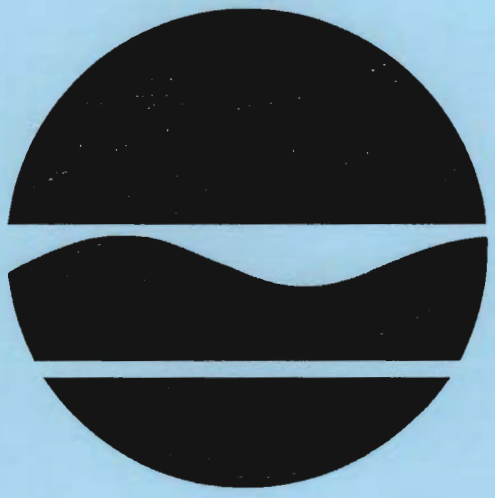
WESTINGHOUSE ELECTRIC CORPORATION

Cheektowaga (T), Erie County, New York
Site No. 9-15-066

PROPOSED REMEDIAL ACTION PLAN

September 1994



Prepared by:

Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation

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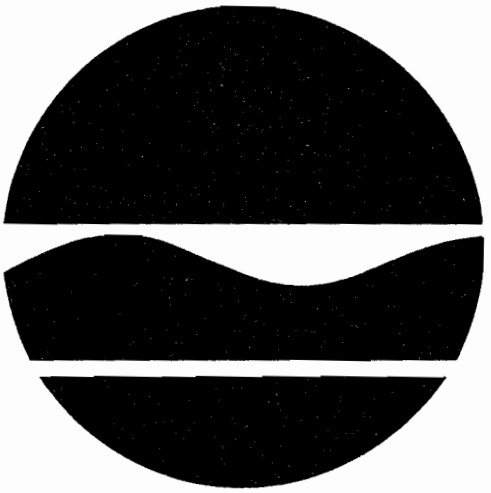

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Division of Hazardous Waste Remediation
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PROPOSED REMEDIAL ACTION PLAN

WESTINGHOUSE ELECTRIC CORPORATION
Operable Unit No. 1 - Soil and Sediment Contamination
Cheektowaga (T), Erie County, New York
Site No. 9-15-066
September 1994

SECTION 1: PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) is proposing On-Site Thermal Desorption for the Westinghouse Electric Corporation, Operable Unit No. 1. Operable Unit No. 1 refers to the identified areas of soil contamination at the site and sediment contamination within the site's storm system including the U-Crest ditch.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy, summarizes the other alternatives considered, and discusses the rationale for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments submitted during the public comment period.

This PRAP is issued by the NYSDEC as an integral component of the citizen participation plan responsibilities provided for by the New York State Environmental Conservation Law (ECL) and 6 NYCRR375. This document is a summary of the information that can be found in greater detail in the Remedial Investigation and Feasibility Study (RI/FS) reports on file at the document repositories.

The NYSDEC may modify the preferred alternative or select another response action presented in this PRAP and the RI/FS Report based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

The public is encouraged to review the documents at the repositories to gain a more comprehensive understanding of the site and the investigations conducted there. The project documents can be reviewed at the following repositories:

Cheektowaga North Branch Library
735 Maryvale Drive
Cheektowaga, New York 14225
(716) 634-4424
Hours: 10:00-5:00, Mon/Fri/Sat.
1:00-9:00, Tues/Thurs.

NYSDEC - Region 9 Office
270 Michigan Avenue
Buffalo, New York 14203
contact: Patricia Nelson
(716) 851-7220

NYSDEC - Central Office
50 Wolf Road
Albany, New York 12233-7010
contact: Michael Ryan
(518) 457-4343

Written comments on the PRAP can be submitted to Mr. Ryan at the above address.

DATES TO REMEMBER:

The public comment period for the PRAP extends from **[September 22, 1994]** until **[October 24, 1994]**.

A public meeting has been scheduled for **[October 4, 1994]** to discuss the PRAP at the **[Cheektowaga Town Hall at 7:00 p.m.]**.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Westinghouse Electric Corporation site is located in Erie County, New York, at 4454 Genesee Street in the Town of Cheektowaga (refer to Figure 1). The site is bordered to the north and west by the Greater Buffalo International Airport, to the east by Holtz Drive (formerly Sugg Road) and to the south by Genesee Street. The site setting is urban/industrial.

The site is approximately one hundred and forty three (143) acres in size. A large plant building structure, approximately 2.5 million square feet in size, and several smaller buildings occupy a significant portion of the site. The remaining portion of the site consists of paved areas, roadways, railroads, and open grass/vegetated areas (refer to Figure 2).

The site is presently inactive with the exception of the Flying Tigers Restaurant, situated on the northern extreme of the site.

Operable Unit No. 1, which is the subject of this PRAP, consists of the identified areas of soil contamination at the site and sediment contamination in the U-Crest Ditch. The ditch, which is located across Genesee Street behind the Calspan facility, receives drainage from the southern portion of the site including the main plant building. Additionally, small volumes of contaminated sediment have been identified in Electric Manhole 5A (Area C), Storm Sewer Line 001 (Areas I & J), Storm Sewer Line 002 (Area K) and Storm Sewer Line 003 (Area M) which will also be addressed by this action. An Operable Unit represents a discrete portion of the remedy for a site which for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the contamination present at a site. The remaining operable unit for this site is described in Section 3.2 below.

SECTION 3: SITE HISTORY

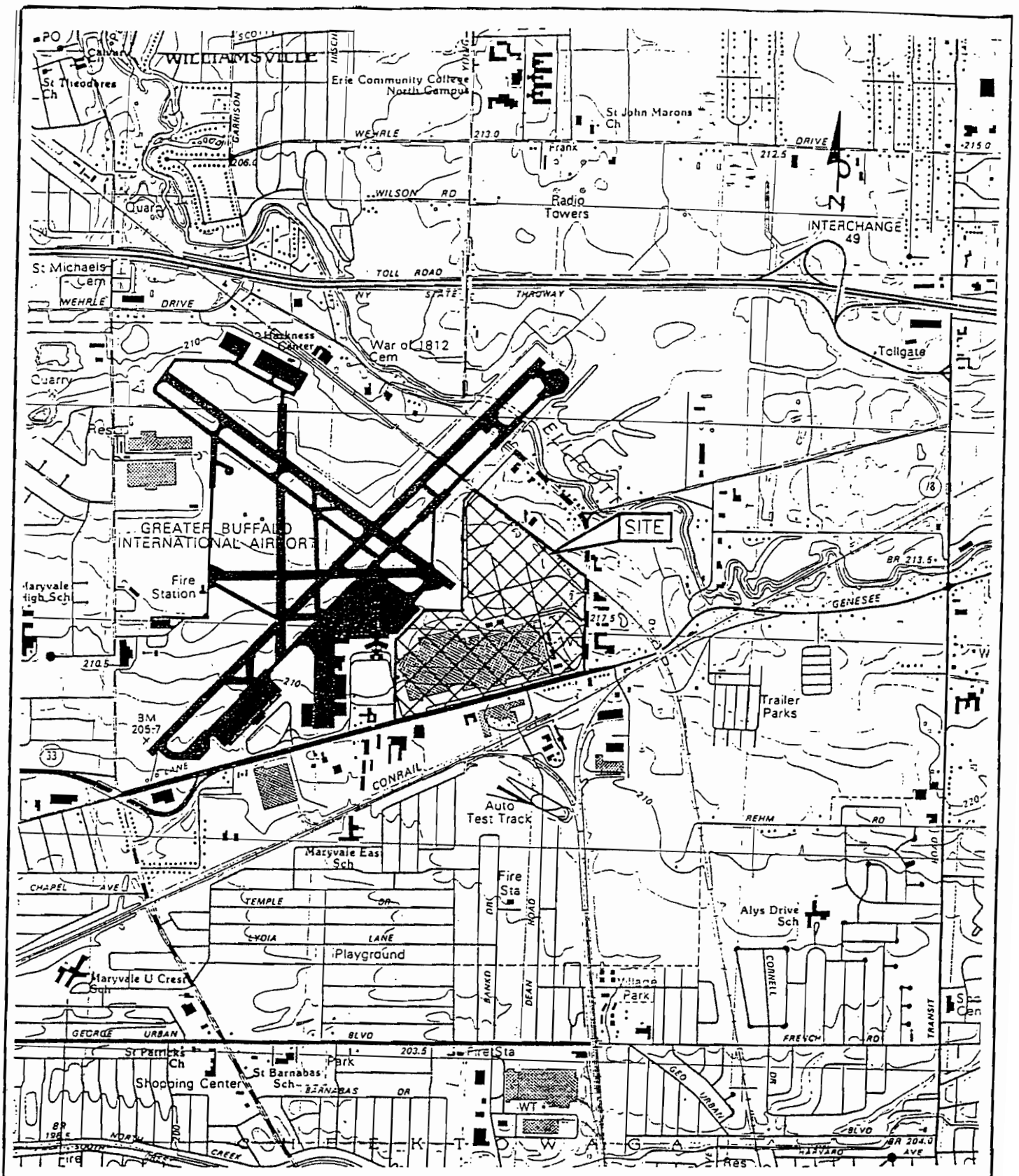
3.1: Operational/Disposal History

1940: The existing facility is constructed by owner/operator Curtis-Wright Corporation and utilized for aircraft production.

1946: The site is sold to the Westinghouse Electric Corporation.

1946-84: Westinghouse Electric Corporation operates the facility for the manufacture of a variety of products including motors, generators, motor controls, gears, etc. but principal manufacturing processes include wire production; copper and aluminum casting; metal machining, fabrication, plating and finishing.

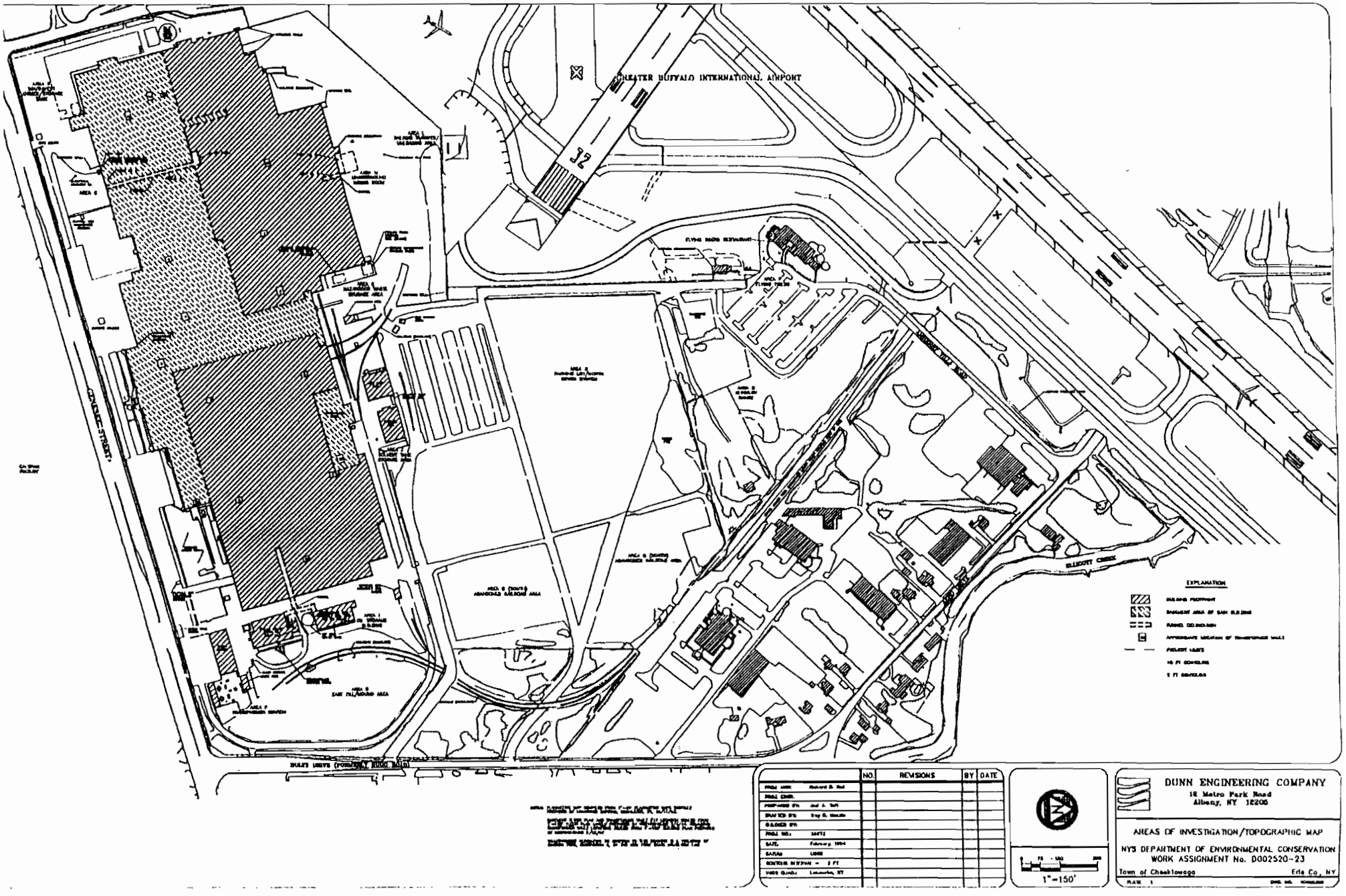
1984: Westinghouse Electric Corporation sells 11.4 acres on the northern portion of the property to the Niagara Frontier Transportation Authority (NFTA) and enters an agreement to sell the remaining portion of the property to a private investor.



DUNN ENGINEERING COMPANY 495 Commerce Drive Amherst, NY 14228	NYS DEPT. OF ENVIRONMENTAL CONSERVATION WORK ASSIGNMENT No. D002520-23 SITE LOCATION MAP WESTINGHOUSE REMIDIAL INVESTIGATION

PROJECT NO.	DATE	DWG. NO.	SCALE	FIGURE NO.
35673	Mar., 1994	4A0087SD	1"=2000'	1

FIGURE 2


GREATER BUFFALO INTERNATIONAL AIRPORT
GENESEE STREET
ELLICOTT CREEK
EXPLANATION
NO. REVISIONS BY DATE
1"=150'
DUNN ENGINEERING COMPANY
12 Metro Park Road
Albany, NY 12205
AREAS OF INVESTIGATION/TOPOGRAPHIC MAP
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WORK ASSIGNMENT No. D002520-23
Town of Cheektowaga
Erie Co., NY

1985: The Erie County Industrial Development Agency (ECIDA) accepted all rights and interest in the facility from the owner. The Buffalo Airport Center Associates (BACA) subsequently entered an agreement (lease with an option to buy) with the ECIDA.

1985-91: The BACA subleased portions of the building for warehousing, general office, and distribution operations.

1991: All tenancies were discontinued.

3.2: Remedial History

1985-86: NYSDEC Phase I Investigation conducted. The Phase I concludes that further investigation is warranted.

1990-91: NYSDEC Preliminary Site Assessment (PSA) conducted. Based on the findings of the PSA, a Class 2 designation is assigned to the Westinghouse site, signifying that the site poses a significant threat to human health and/or the environment.

1992: After negotiations with Westinghouse Electric Corporation are unsuccessful, the site is referred for action under the State Superfund Program, funded by the 1986 Environmental Quality Bond Act.

1993-94: NYSDEC Remedial Investigation (RI) conducted. The RI recommends the site be divided into two operable units to address the (1) soil and sediment contamination and (2) the groundwater/surface water contamination.

1994: NYSDEC Feasibility Study (FS) for Operable Unit No. 1, Soil and Sediments, completed. The FS for Operable Unit No. 2, Groundwater/Surface Water, is underway.

1994: At the request of the NYSDEC, the BACA is presently implementing a voluntary removal of all PCB transformers at the site. A total of 25 transformers will be removed from subsurface vaults within the facility.

As stated previously, Operable Unit No. 1 (OU-1) is the subject of this PRAP. Operable Unit No. 2 will be the subject of a future PRAP. A remedy will be proposed to address the identified groundwater contamination problem. Groundwater beneath the main plant building has been shown to be contaminated with a variety of contaminants attributable to past site operations. Because utilities no longer function at the facility, sumps which previously maintained/controlled shallow groundwater at the site have been shut down. The result has been the migration of contaminated groundwater into the site's extensive sewer network, thus enabling contamination to exit the site via storm water discharge to the U-Crest ditch. Operable Unit No. 2 will address this situation.

SECTION 4: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and/or the environment, the NYSDEC has recently completed a Remedial Investigation/Feasibility Study (RI/FS).

4.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in two phases. The first phase was conducted in the summer of 1993 and the second phase was conducted in early 1994. A report entitled "Remedial Investigation/Feasibility Study Report, Westinghouse Electric Corporation Site", dated September 1994, has been prepared describing the field activities and findings of the RI in detail.

The RI activities consisted of the following:

- Soil Gas Investigation - A soil gas survey was conducted on selected portions of the site to help pinpoint areas of concern and select optimum locations for borings and monitoring wells. Grids were established and soil gas probes were installed at depths ranging from two to four feet. Soil gas/headspace analysis was conducted using an on-site gas chromatograph (GC), targeting eleven volatile parameters previously identified at the site. The GC was also used to analyze test pit soil samples and soil boring samples.

- Environmental Sampling - Non-intrusive sampling was conducted of storm sewers, sanitary sewers, outfalls, streams, ditches sumps, tunnels, vaults, surface soils, surface water and sediments.

- Test Pit Excavation - A total of one hundred test pits were excavated in eleven principal areas of investigation to assess the physical and chemical characteristics of subsurface soils and fill materials.

- Boring/ Monitoring Well Installation - Soil borings and monitoring wells were installed for analysis of soils and groundwater as well as to determine the physical properties of the soil and the hydrogeologic conditions.

To determine which media (soil, groundwater, etc.) contains contamination at levels of concern, the analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Westinghouse site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure rates, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Based on the results of the RI, a total of nine of the identified areas of investigation have been incorporated in OU-1. Soil contamination was identified in Areas I, J, K, M, O, P and Q and sediment contamination was identified in Areas C, E and M. The locations of these Areas of Investigation are presented on Figure 3. Additionally, a number of abandoned tanks remain in place in areas I, J and K. The tanks do not contain product but in several instances have been filled in place (sand or concrete). These tanks and associated piping will be removed as part of OU-1.

The extent and severity of soil and sediment contamination within each area was determined by the collection of numerous samples which were subjected to chemical analysis. The laboratory results were used in conjunction with field observations and on-site screening of recovered samples (with an HNU and GC) in order to delineate the areal and vertical extent of contamination.

A summary of the contaminated soils and sediment identified within each area of investigation associated with OU-1 is presented in Table 1. The table describes the area of concern, the primary contaminant/waste groups detected, the assessed source area of contamination and the estimated volume of contaminated media within each area.

The estimated volume of a contaminated media was developed by comparing the levels of contamination detected within each Area of Investigation to recommended cleanup objectives (ref. TAGM No. HWR-94-4046). Table 2 lists the proposed remedial objectives.

4.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Several IRMs were implemented during the RI field program at the direction of the NYSDEC. IRMs were undertaken at three areas on the project site, which were identified during the PSA, in order to prevent or reduce the spread of contaminants or limit the need for more complex and costly future remedial actions. These IRMs included: removal of the underground varnish tank located south of the Heat Treatment/Plating Area (Area C); removal of the septic tank in the Gunnery Range (Area O); and pumping out of the Sump No. 4 located adjacent to the Underground Mixing Room (Area M). The work was performed on June 30 and July 1, 1993 (refer to Figure 2 for locations).

Based on the findings of the RI, an additional IRM was undertaken in April, 1994. The RI revealed elevated levels of contaminants, including volatile compounds, in the storm sewer system within the main plant building. Similar contaminants were also detected outside the building in the immediate proximity of former tank storage areas (Areas I, J, and K) and the underground mixing room (Area M). Using mechanical plugs, storm sewer laterals which pass near these areas were plugged as an IRM to preclude the flow of contaminated groundwater into storm sewers from these areas.

FIGURE 3

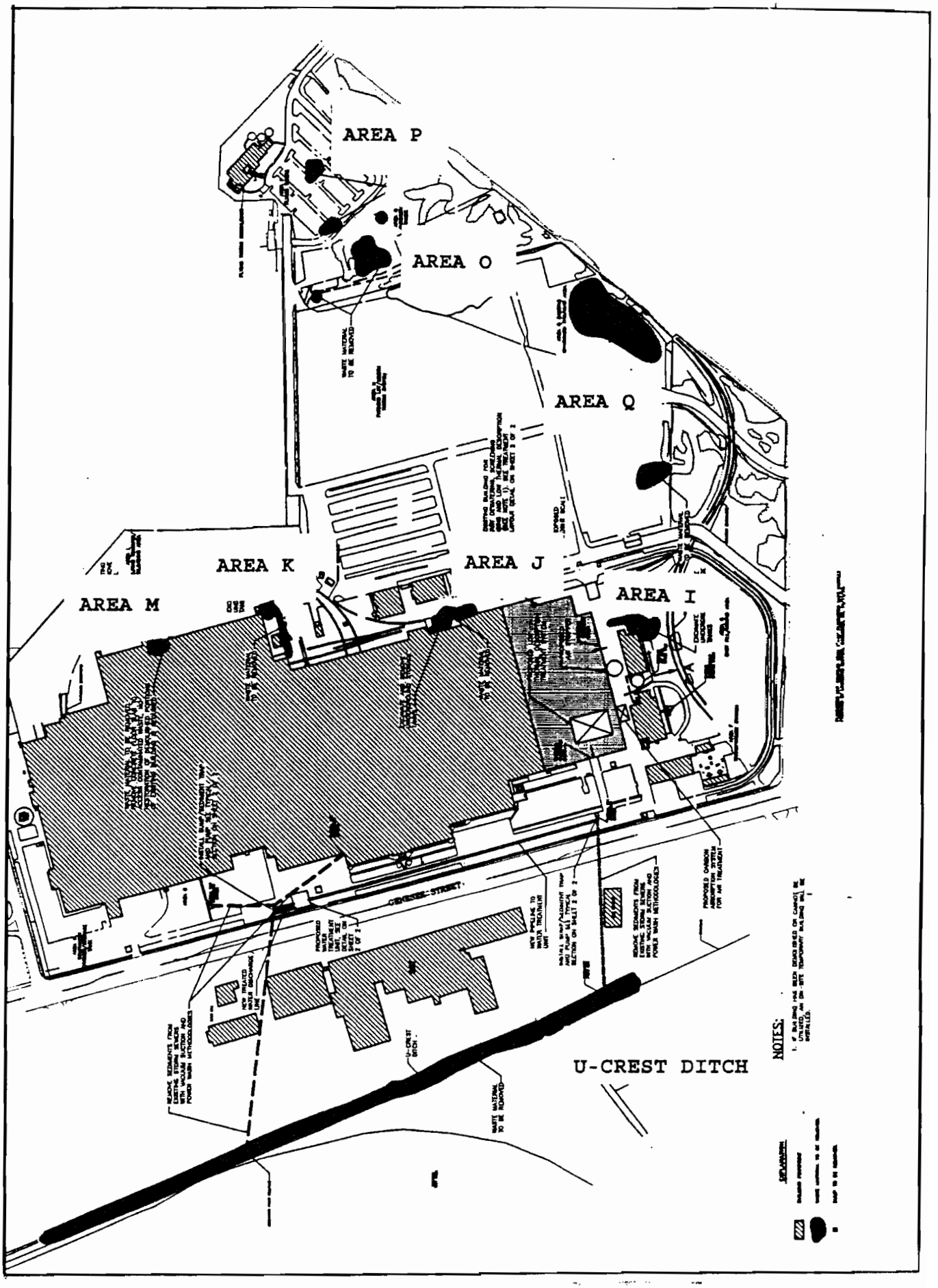

AREA P
AREA O
AREA Q
AREA K
AREA J
AREA M
AREA I
GENESEE STREET
U-CREST DITCH
NOTES:

Table 1
Westinghouse Electric Corporation Site
Summary of Remedial Investigation Findings

Area of Concern	Contaminated Media	Primary Contaminant(s) Waste Group Detected	Contaminant Range (ppm)[1]	Estimated Area and Volume of Contamination
C - Electric Manhole 5A	Sediment	Volatiles Semivolatiles	23 - 440 <1 - 2.3	Areal Extent: 2'x2' Est. Volume: minimal
E - Storm sewer Line 001	Sediment	Semivolatiles PCBs Metals	<1 - 690 1.5 <1 - 5330	Est. Volume of Sediment in Pipe Network: 1-5 cu. yds.[2]
E - Storm sewer Line 002	Sediment	Volatiles Semivolatiles PCBs Metals	1.4 - 5.7 1.2 - 54 2.8 - 5.6 <1 - 3780	Est. Volume of Sediment in Pipe Network: 1-5 cu. yds.[2]
E - Storm sewer Line 003	Sediment	Volatiles Semivolatiles PCBs Metals	1.6 - 97 6.4 - 1800 1.7 <1 - 2950	Est. Volume of Sediment in Pipe Network: 1-5 cu. yds.[2]
E - U-Crest Ditch	Sediment	Semivolatiles Pesticides PCBs Metals	<1 - 96 <1 1.4 - 6.9 <1 - 125000	Areal extent: 2000' x 15' Avg. Depth: 1' Est. Volume: 1111 cu. yds. Est. Volume of Sediment in Pipe Network: 1-5 cu. yds.
I - Oil Storage Area	Subsurface Soil	Volatiles	<1 - 100	Area Extent: 85'x100' Avg. Depth 18' Est. Volume: 5667 cu. yds.
J - Underground Storage Tank Area	Subsurface Soil	Volatiles Semivolatiles	3.8 - 2400 <1 - 7.3	Area Extent: 55'x90' Avg. Depth 10' Est. Volume: 1983 cu. yds.
K -Hazardous Waste Storage Area	Subsurface Soil	Volatiles Semivolatiles	2 - 530 <1 - 8.5	Areal Extent: 50'x50' Avg. Depth: 12' Est. Volume: 1111 cu. yds.
M -Underground Mixing Room Sump No. 4	Sediment/ Waste Product	Volatiles	170 - 1300	Area Extent" 2'x2' Avg. Depth: 1' Est. Volume within sump structure: 0.2 cu. yds.

Table 1 (cont.)
Westinghouse Electric Corporation Site
Summary of Remedial Investigation Findings

Area of Concern	Contaminated Media	Primary Contaminant(s) Waste Group Detected	Contaminant Range (ppm)[1]	Estimated Area and Volume of Contamination
M - Underground Mixing Room	Subsurface Soil	Semivolatiles	14	Areal Extent: 35'x60' Avg. Depth 10' Est. Volume: 778 cu. yds.
O - Gunnery Range	Subsurface Soil	Volatiles Semivolatiles	-- <1	Areal Extent: 100'x100' Avg. Depth: 5' Est. Volume: 1852 cu. yds.
P - Flying Tigers Restaurant Area (Total of two areas)	Subsurface Soil	Volatiles	1.5 - 13	Areal Extent: 50'x50' Avg. Depth 5' Est. Volume: 463 cu. yds.
Q - Railroad Track/Western Parking Lot	Subsurface Soil	Volatiles	8.3	Area Extent: 110'x50' Avg. Depth 6' Est. Volume: 1222 cu. yds.
Q - Railroad Track/ Western Parking Lot	Surface Soil/ Waste Piles	Semivolatiles PCBs	<1 - 1.3 1.7 - 5.2	Est. Volume: 10-20 cu. yds.

1 Range of contaminant concentrations which exceeded remedial objectives.
2 Includes pipe network between outfall stations and ditch discharge pts.

TABLE 2
Westinghouse Electric Corporation Site
Proposed Remedial Objectives for Soil and Sediment
(based on protection of groundwater / drinking water quality)

CONTAMINANT	PROPOSED CLEANUP OBJECTIVE (ppm)
VOLATILES	
1,1,1-Trichloroethane	1.140
Trichloroethene	1.050
Toluene	2.250
Ethylbenzene	8.250
Total Xylenes	1.8
SEMI-VOLATILES	
4-Methylphenol	1.350
Benzo(a)anthracene	0.220 or MDL
Benzo(a)pyrene	0.061 or MDL
Benzo(b)fluoranthene	1.650
Benzo(k)fluoranthene	1.650
Chrysene	0.6
Dibenz(a,h)anthracene	0.014 or MDL
Indeno(1,2,3-cd)pyrene	4.8
PCBs	
Aroclor-1254	10(1.0-Sediment)
Aroclor-1260	10(1.0-Sediment)
METALS	
Arsenic	7.5 or SB
Berylium	0.16 or SB
Chromium	10 or SB
Copper	25 or SB
Lead	500
Thalium	SB

KEY
MDL - Method Detection Limit
PPM - Part per Million
SB - Site Background

4.3 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 6 of the RI Report.

An exposure pathway is the process by which an individual comes into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

An evaluation of the RI and exposure assessment data indicated that the significant potential exposure points associated with the site would be: 1) the direct contact with subsurface soil by future construction workers; 2) the direct contact with surface soils by site trespassers and future on-site workers; 3) the direct contact with nearby surface water and sediments from the U-Crest ditch by nearby residents; 4) the direct contact with surface water from the flooded areas within the main building by site trespassers and future construction workers; 5) the direct contact with surface water and sediments from the storm water and sanitary sewer systems by future construction workers; and 6) the direct contact with surface water and sediments in the electric manhole 5A (Area C) by future on-site workers.

4.4 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The Habitat Based Assessment included in the RI (Section 5) presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

The Fish and Wildlife Impact Analysis (FWIA) determined that there are two habitats which could potentially be impacted by site related contaminants: Ellicott Creek and the U-crest ditch. Ellicott Creek is a high quality aquatic habitat whereas the U-crest ditch represents a low quality habitat.

Due to the industrial nature of the site, however, impacts to the terrestrial environment are anticipated to be minimal.

Comparison of Ellicott Creek surface water and analytical results with applicable criteria indicated that surface waters have not been impacted by site related contaminants. Data indicate that no further investigation or any remedial efforts are necessary in Ellicott Creek.

Surface water samples collected from the U-Crest ditch indicated that surface water quality in the vicinity of the discharge points to the ditch is impacted by site related contaminants. However, the contaminant levels detected in a sample collected approximately 800 feet downstream of the 002/003 discharge point generally exhibited lower concentration. Sediment samples from the U-crest ditch have been impacted by site related contaminants. Although the U-Crest ditch is a poor quality aquatic habitat, excavation of the sediments in the ditch has been recommended.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include the Curtis-Wright Corporation, Westinghouse Electric Corp., the Niagara Frontier Transportation Authority and the Buffalo Airport Center Associates.

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. These goals are established under the overall goal of meeting all standard, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce the migration and concentration of contaminants contained in the soils to levels which are not anticipated to leach and result in exceedence of New York State Groundwater Standards (ref. Table 2).

- Prevent and/or minimize direct contact/ingestion of contaminated soils in excess of remedial objectives (ref. Table 2).

- Prevent the release and reduce the concentration of contaminants contained in the U-Crest Ditch sediments to levels which will not impact surface water quality standards or the aquatic ecosystem (ref. Table 2).

- Remediate the contaminated soil in such a manner that minimizes any possible direct human or environmental contact; and treat the contaminants to levels which can be classified as non-hazardous and/or attain levels which meet the soil cleanup objectives.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for Operable Unit No. 1 at the Westinghouse site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled *"Remedial Investigation/Feasibility Study Report, Westinghouse Electric Corporation"*, dated

September, 1994. A summary of the detailed analysis follows.

7.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils at the site, sediments in the U-Crest Ditch and other sumps and storm sewers. Groundwater and its impact on surface water in the U-Crest Ditch will be the subject of the second operable unit.

Alternative No. 1 - No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It would require continued assessment only, allowing the site to remain in an unremediated state. Under this alternative the site would remain in its present condition and human health and the environment would not be provided any additional protection. There would be no cost associated with this alternative.

Alternative 2 - Limited Action

Present Worth	$ 656,000
Capital Cost:	$ 104,000
Annual O&M:	$ 32,000
Time to Implement	6 months - 1 year

The Limited Action Alternative would be comprised of the following six components:

- Improve and maintain the existing fence around the perimeter of the site.

- Impose deed, zoning and property transaction restrictions, to the extent practicable.

- Increase public awareness of the contamination problems at the site and the risks associated with the contamination.

- Conduct a continuous or periodic sampling program to monitor the contamination levels of the impacted media(s).

- Prior to the planned demolition of the various building structures, the existing storm sewer system would be decommissioned and terminated within the confines of the property boundaries of the site.

The components of this alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed based on the results of the monitoring program.

Alternative 3 - On-Site Containment

Present Worth	$ 7,082,000
Capital Cost:	$ 6,500,000
Annual O&M:	$ 32,000
Time to Implement	6 months - 1 year

On-site containment would involve construction of a landfill cell within the site boundaries. The selected area would have to be declared as a "Corrective Action Management Unit" (CAMU). The CAMU rule is a federal regulation designed to promote on-site remediation and reduce off-site disposal of hazardous wastes. The CAMU provision in this instance, would waive the Landfill Disposal Restriction (LDR) requirement for pretreatment of the waste.

All contaminated soil and sediments would be excavated, dewatered as necessary, and disposed within the containment cell. Existing underground storage tanks and associated piping would also be removed during the excavation and transported to the cell. The landfill would have to be constructed in accordance with Federal and State requirements. The major requirements of such landfills include an impervious cap; a double liner; a leachate detection, collection and removal system; run-on and run-off control systems; and wind dispersion controls.

The landfill's features (cap, liner, etc.) would reduce direct exposures, infiltration of precipitation, and migration or leaching of residual contamination. The site would be periodically monitored and inspected to ensure the containment features remain functional. Access to the site and future use would be restricted to protect the containment structures.

Alternative 4 - Ex-Situ Soil Vapor Extraction

Present Worth	$ 5,521,000
Capital Cost:	$ 5,521,000
Annual O&M:	$ 0
Time to Implement	1-2 years

Ex-Situ Soil Vapor Extraction involves the physical removal of the contaminants from the soil and sediments by inducing air flow through the soil matrix. The flowing air strips volatile compounds from the solids and carries them to the extraction well/pipes by the use of a vacuum. The recovered vapors would be subject to treatment.

The alternative would involve the stockpiling of the soil and sediments within a temporary structure. The contaminated media would be subsequently placed in windrows (piles). Perforated piping would be located horizontally in the lower and upper portions of the windrow, which would be covered by a plastic liner material. Warm air would be blown into the lower perforated pipe. The vapors would be collected from the upper perforated pipe by a vapor extraction system. The vapor stream would be treated by carbon adsorption prior to discharge to the atmosphere.

Once the remedial criteria are achieved, the treated residuals would be disposed within a designated area at the site.

Alternative 5 - On-Site Thermal Desorption

Present Worth	$ 7,333,000
Capital Cost:	$ 7,333,000
Annual O&M:	$ 0
Time to Implement	6 months - 1 year

Thermal desorption is an ex-situ process that uses direct or indirect heat exchange to vaporize organic contaminants from solid and semisolid matrics. On-site thermal desorption involves the thermal separation of the organic contaminants from the soil and sediments. The contaminated media would be excavated and heated in the treatment unit to evaporate the organic contaminants. The evaporated organics would subsequently be treated in an afterburner or condensed for off-site destruction.

The treated media would be disposed within a designated area at the site. Any uncondensed combustion gases would be recirculated through the unit, with any remaining portion treated by activated carbon, prior to venting to the atmosphere.

Alternative 6 - Off-Site Incineration

Present Worth	$ 34,665,000
Capital Cost:	$ 34,665,000
Annual O&M:	$ 0
Time to Implement	6 months - 1 year

Off-site incineration would involve excavating the contaminated soils and sediments and transporting them off site for incineration at a permitted facility.

The ash residues from the incinerator would be disposed at a permitted off site landfill.

Alternative 7 - On-Site Incineration

Present Worth	$ 21,083,000
Capital Cost:	$ 21,083,000
Annual O&M:	$ 0
Time to Implement	1-1.5 years

On-site incineration would involve the thermal destruction of the organic contaminants in the soil and sediment. A transportable incinerator would be set up on the site and would process contaminated soils and sediment after they are excavated. The residuals from the incinerator would be disposed in a designated area at the site.

The incinerator would be designed and operated under all applicable regulations for hazardous waste incinerators. Air pollution control devices would treat the gaseous emissions from the incinerator so that no pollutants are emitted at unacceptable levels.

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Of the alternatives, No Action and Limited Action would not comply with State Standards, Criteria and Guidelines (SCGs). The remaining alternatives each would satisfy applicable SCGs.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Of the alternatives, No Action and Limited Action would not be protective of human health and the environment. The remaining alternatives, however, would all be protective of human health and the environment.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

There would be no short term effects if no actions were taken and relatively few with any of the remaining alternatives. The short term effects for the various construction-related alternatives are primarily related to dust suppression, worker safety and other general protective measures, with the degree of handling of the material and possible air emissions providing the significant difference between alternatives. The alternatives ranged in their degree of possible impact from off-site incineration which presented the least handling to Soil Vapor Extraction (SVE), which due to the increased handling of the contaminated material, represented the highest. Air emissions were of greatest concern for on-site incineration and least again for off-site incineration. In all instances controls can be incorporated into the project which will mitigate these possible impacts. The time-frame associated with the implementation of the various remedial alternatives ranged to a maximum of two years.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

The No Action and Limited Action alternatives would not provide long term protection as they would not prevent future exposure to contaminated materials. On-Site Thermal Desorption, Soil Vapor Extraction and the Incineration alternatives would effectively provide long term protection. The On-Site Containment alternative, however, would rely on enforcement of easement restrictions as a means of protection. Enforcement of easement restrictions can be problematic. Operation and maintenance activities would also be required to insure the integrity of the impoundment is maintained, decreasing this alternative's ability to satisfy this criteria.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The No Action and Limited Action alternatives would not satisfy the reduction in toxicity, mobility and/or volume criteria. Because the Containment alternative would not involve treatment of the contaminated media, the toxicity and volume would not be reduced. The ability of Soil Vapor Extraction to effectively treat the contaminated material to the levels required by the remedial objectives is also questionable, in light of the soil's physical characteristics, thus possibly limiting the reduction in the toxicity of the waste compared to the other treatment alternatives. The remaining alternatives would satisfy this criteria.

6. Implementability. The technical and administrative feasibility of implementing

each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personal and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

The No Action alternative would be the easiest alternative to implement. On-site incineration would be the most difficult alternative to implement in light of system mobilization and complicated start-up procedures. Soil Vapor Extraction would also be difficult to implement from a technical standpoint, due to the site-specific physical characteristics of the soil which may hinder the ability of the Soil Vapor Extraction alternative to effectively treat the contaminated media. The physical characteristics of the site soils are clayey in nature which could present treatability problems. The remaining alternatives could each be implemented using standard construction techniques and available control technologies, although with varying degrees of effort and time.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 3 .

The No Action alternative would be the least costly with no cost followed by Limited Action as the next in cost. The limited action costs would not reflect the cost of the loss of future use of the property. Of the excavation and treatment methods, the least costly would be Soil Vapor Extraction, next would be the Containment alternative and On-Site Thermal Desorption. The highest priced alternatives are the incineration alternatives with On-Site Incineration at $21,000,000 and Off-Site Incineration at $34,600,000.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan are evaluated. A " Responsiveness Summary" will be prepared that describes public comments received and how the Department will address the concerns raised. If the final remedy selected differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

TABLE 3

WESTINGHOUSE ELECTRIC CORPORATION
Site No. 9-15-066
Operable Unit No. 1

REMEDIAL ALTERNATIVES	COSTS
No Action	$ 0
Limited Action	656,000
On-Site Containment	7,082,000
Soil Vapor Extraction	5,521,000
Thermal Desorption	7,333,000
Off-Site Incineration	34,665,000
On-Site Incineration	21,083,000

SECTION 8: SUMMARY OF THE PREFERRED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is proposing **Alternative 5, On-Site Thermal Desorption**, as the remedy for this site.

Alternative 5, On-Site Thermal Desorption, would: comply with the SCGs; be protective of human health and the environment; be effective in the long-term and permanent; and, relative to other potentially effective alternatives, would be more easily implemented. Minimum uncertainties or expected technical delays would be anticipated with Thermal Desorption, relative to the other technologies evaluated. Thermal Desorption would meet the RAOs for this site and would be consistent with the preference for remedies which permanently reduce toxicity, volume, or mobility.

The estimated present worth cost to implement the remedy would be $7,333,000. This reflects the cost to construct/implement the remedy and no annual operation and maintenance costs, since post remedial monitoring is not anticipated since treatment will meet remedial objectives .

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and monitoring of the remedial program. Uncertainties identified during the RI/FS would be resolved.

2. Excavation of all contaminated soil and ditch sediments including identified waste piles, with transportation of the material to a

dedicated on-site staging area. Approximate areas to be addressed are identified on Figure 3 and volumes are provided on Table 1. Final volumes and area will be defined by compliance with the remedial objectives included on Table 2.

3. Dewatering of soil and sediments as necessary, with temporary storage or on-site treatment of accumulated water.

4. Excavation of underground storage tanks and associated piping in Areas I, J and K. The removed tanks and piping would be properly decontaminated. Any sediments from the piping or tanks, as well as the sediment from the areas identified in Table 1 would also be stockpiled for treatment.

5. The stockpiled soils would be treated by an on-site mobile thermal treatment unit. The off-gas from the process would be treated by carbon adsorption or other appropriate control technology prior to discharge.

6. Based upon achievement of the remediation goals, a selected portion of the site will be designated as a CAMU for site remediation purposes. The treated soil/sediment from the low temperature thermal system and the decontaminated tanks and piping would be disposed within the CAMU and graded as appropriate.

7. Site restoration would include: demobilization of equipment; site grading and establishment of vegetative cover; surface water controls; site cleanup; pavement repair; restoration of aquatic environment along U-Crest ditch; decontamination of staging/decon pads, etc.