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PROPOSED REMEDIAL ACTION PLAN

2/93

Superfund Update

Schatz Plant Site

DUTCHESS COUNTY, NEW YORK

NYSDEC

Region 3 **February, 1993**

PROPOSED REMEDIAL ACTION PLAN

CONTAMINATED SOILS

New York State Department of Environmental Conservation (NYSDEC) Announces Proposed Remedial Action Plan (PRAP)

This document presents the remedial alternatives being considered for the Schatz Plant Site, Poughkeepsie, New York. This Plan includes the preferred remedial alternative as recommended by NYSDEC. The alternatives outlined in this summary sheet are presented in detail in the Remedial Investigation/Feasibility Study (RI/FS) which is available for review at the addresses listed below. Those who wish to learn more about this study are encouraged to review the RI/FS.

Public Involvement

NYSDEC welcomes the public to participate in a public review of the remedial alternatives for the Schatz Plant Site. Calendar dates for public participation are as follows:

February 11, 1993 to March 15, 1993 - Public Comment period for the RI/FS and PRAP.

March 4, 1993 - Public Meeting is scheduled for 7:30 p.m. and will be held at the Poughkeepsie Town Hall (see address below).

Copies of the RI/FS will be available for public review and/or copying at the following locations:

Poughkeepsie Town Hall, 1 Overocker Road, Poughkeepsie, New York.

New York State Department of Environmental Conservation Region 3 Office, 21 South Putt Corners Road, New Paltz, New York

Adriance Public Library, 43 Market Street, Poughkeepsie, New York.

Following the public meeting, comments will be summarized in the Responsiveness Summary section of the Record of Decision (ROD). The ROD is the document that presents NYSDEC's final selection for cleanup. During the public comment period, the public can send written comments to or obtain information from:

Thomas Gibbons
Schatz Plant Project Manager
New York State Department of Environmental Conservation, Rm. 222
50 Wolf Road, Albany, New York 12233-7010
(518) 457-1708 or Toll Free 1-800-342-9296

Erin O'Dell
Citizen Participation Specialist
NYSDEC Region 3 Headquarters
21 South Putt Corners Road
New Paltz, New York 12561-1696
(914) 255-5453

Joseph Crua
Bureau of Environmental Exposure Investigation
New York State Department of Health, Rm. 205
2 University Place, Albany, New York 12203-3313
(518) 458-6306 or Toll-Free 1-800-458-1158

I. OBJECTIVE

The Proposed Remedial Action Plan (PRAP) summarizes the findings of the Remedial Investigation/Feasibility Study (RI/FS) for the Schatz Plant Site (I.D. #3-14-074) and presents New York State Department of Environmental Conservation's (NYSDEC) proposed alternatives for remediating the contamination problem at this site. Remedial alternatives presented in this PRAP will address contamination in the soil and groundwater media. NYSDEC has not yet finalized its recommendation for contamination associated with on-site buildings.

II. SITE LOCATION AND DESCRIPTION

The Schatz Plant Site (former Schatz Federal Bearing Company) is located at 70 Fairview Avenue in the City and Town of Poughkeepsie, Dutchess County, New York as shown in Figure A-1. The site occupies an area of approximately 20 acres (Figure A-2). The Schatz Plant Site lies on gently rolling land in a mixed industrial and residential area. Several new companies have moved into some of the former Schatz Plant buildings such as AT&T, Sargo, Four Thousand Dye, Acme Caster Company and Schatz Manufacturing Company. A Rehabilitation Center and playground for day care and training of mentally disabled persons are located near the center of the site. A baseball field used by the public is located in the northern half of the site. Adjoining the Schatz Plant property to the south is the Schatz Manufacturing Company, located on about 10 acres of land formerly occupied by the Poughkeepsie Foundry. The area south of the site is primarily industrial. Residential areas are located to the north and east. A residential area and medical facilities exist on the western side of the railroad tracks.

III. SITE HISTORY

In December 1908, the Schatz Manufacturing Company was incorporated and on August 8, 1909, ground was broken by the Schatz Manufacturing Company for its first plant. On March 10, 1910 the factory was put into operation employing approximately 75 people. The principal articles manufactured at that time consisted of a general line of hardware specialties, mechanics tools, sheet metal stamps, ball bearing casters, special ball bearings, machinery and tools.

In 1912, annular ball bearings were developed for commercial use and were in immediate demand. In December 1915, the Schatz Federal Bearings Company, Inc. (formerly Schatz Manufacturing Company) was organized to manufacture high grade annular ball bearings. The first Federal Bearings Plant was completed early in 1916. The plant size was increased in 1920 and again in 1926 with the addition of a chemical and physical laboratory.

In 1934, the Schatz Federal Bearing Company employed 700 people. The business grew rapidly and employment reached 1,200 people by 1950. Maximum production occurred during the years of 1942-1960, then began to decline in 1967. In 1960, Schatz acquired the Poughkeepsie Foundry directly south of the existing plant site. The company filed for bankruptcy in 1980 and closed in 1981. In 1983, the Schatz Manufacturing Company name was bought by Walter Pomeroy and manufactures bearings in the old Poughkeepsie Foundry plant to the south.

After liquidation, the Schatz Plant Site property was acquired by 1929 Associates, Pleasant Valley Finishing Company, and Fairview Lithographic Company. It was purchased in January 1988 and is presently owned by Lot Six Realty Corporation, with the exception of a two acre parcel owned by AT&T. Active businesses and industries presently include Acme Caster Co., AT&T, Four Thousand Dye Company, Rehabilitation Programs, Inc., Sargo, Taconic Vehicle Maintenance, and Schindler. Two of the original Schatz Buildings, No. 2 (heat treatment building) and No. 3 are unoccupied.

The Schatz Plant waste materials were disposed at an off-site landfill beginning in 1948 and continuing through 1973. The landfill, located about 1.7 miles east of the Schatz Plant, has been the subject of a separate NYSDEC RI/FS and Remedial Design Study (Schatz Federal Bearing Site, 3-14-003). The landfill site contains Schatz wastes including cutting oils, lubricants, grinding sludges, solvents, coolants, and metal parts. The Schatz landfill soils contained elevated levels of chlorinated solvents and other volatile organic compounds (VOCs), polyaromatic hydrocarbon compounds (PAHs), poly-chlorinated biphenyls (PCBs) and metals.

Since May 1986, NYSDEC has identified numerous 55-gallon drums, electrical capacitors and quenching pits within the on-site vacant buildings which contain PCBs, VOCs, semivolatile organic compounds (SVOCs) and PAHs, similar to those compounds found at the Schatz Federal Bearing Landfill. Floor wipe samples from the vacant buildings detected significant concentrations of PCBs. This property is the subject of an interim remedial measure (IRM) by DEC for removal of PCB-laden capacitors.

IV. CURRENT SITE STATUS

In February 1991 a work assignment was issued to Engineering-Science (E-S), a Liverpool, New York based engineering firm, to conduct a Remedial Investigation/Feasibility Study (RI/FS) on the Schatz Plant Site. Guidelines for the investigation were established based upon the draft October 1988 United States Environmental Protection Agency (EPA) document, Guidance for Conducting Remedial Investigations and Feasibility Studies Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The primary objectives of this study are:

Remedial Investigation (field data):

- Assess the nature, extent and the source of contamination.
- Evaluate the groundwater flow conditions and groundwater quality in the overburden and bedrock.

Feasibility Study (cleanup alternatives):

- Assess the risk to public health and to the environment.
- Develop and select a cost-effective, environmentally sound, remedial action to correct the problems.

Fieldwork was conducted in two phases. The Phase I investigation was conducted from July, 1991 to December, 1991 and a Phase II Investigation from January, 1992 to July, 1992. Extensive sampling was carried out on all media, including groundwater, soil, waste, building surfaces and air, both on-site and at adjacent properties. In addition, an aerial photographic study was conducted to help define the exact locations of potential waste disposal areas. The results of the RI/FS identify several contamination problems:

Contaminated Soils

North Field

This two-acre open field, north of Irving Avenue (Figure A-2), was determined to be a waste disposal area. Identification of an area of patchy vegetation or bare ground littered with machine parts resulted in an extensive subsurface investigation. Significant oil-stained soil and waste was discovered which, upon sampling and analysis, revealed low levels of PCBs (up to 11 ppm), VOCs (up to 16 ppm), SVOCs (up to 19 ppm) and several metals including lead, chromium, and iron which exceeded normal ranges for typical soils in this area.

Western Property Boundary

Subsurface soil samples collected west of Schatz Building #2 and the Taconic Building (Figure A-2) showed evidence of oil staining. Analytical results from samples collected in this area showed a minor occurrence of SVOCs (up to 26 ppm), PCBs (up to 6.5 ppm) and elevated levels of metals. One sample contained high levels of lead (55,900 ppm).

Boundary Area

Oil-stained soil was discovered at the fenced boundary between the Schatz Plant Property and the Schatz Manufacturing Company Property. Extensive soil sampling of this area was conducted at depths down to one foot and revealed PCB contamination at levels up to 210 ppm in a one-half acre area. Conservative volume estimates, assuming contamination down to the maximum bedrock depth of 16 feet, indicate up to 8200 yd^3 of soil exceeding 10 ppm (including surficial soil, 0-1 foot, exceeding 1 ppm). Of this 8200 yd^3, 3000 yd^3 are expected to exceed 50 ppm.

Rehabilitation Center Playground

Contamination in the playground area was limited primarily to SVOCs in shallow soils. Levels up to 22 ppm were found at the northern end of the playground.

Other Contaminated Soil Areas

SVOC contamination (481 ppm) was found under a weathered drum at the south end of the investigation area. Chromium was detected above the upper limit of the background range for NYS soils (40 ppm) in numerous samples throughout the Schatz Plant Site and on the Schatz Manufacturing Company Property.

Groundwater

Toluene was found in the groundwater at a concentration of 9 ppb in one sample downgradient of this site. This is slightly above the NYS groundwater standard of 5 ppb. In addition, manganese (up to 5200 ppb) and arsenic (up to 7.6 ppb) were present in groundwater, however, neither of these inorganics can be attributed to an on-site source.

Contaminated Building Surfaces

Extensive contamination (predominately PCBs) were found in numerous floor wipe and floor drain samples collected within Buildings #2 and #3 and the Rehabilitation Center (Figure A-2). Levels ranging up to 30,400 ug/m^2 from wood and cement floor wipe samples were detected. PCBs (up to 45 ppm) and SVOCs were found in sediment from floor drains in Building #3. Floor sweepings from Building #3 detected PCBs at concentrations up to 350 ppm.

Table 1 (below) is a list of contamination levels for the primary contaminants or indicator chemicals (those contaminants which pose the greatest public health and environmental concern for a particular site) in groundwater, soil/waste and surface wipe samples at the Schatz Plant Site along with the associated cleanup levels or SCGs (NYS Standards, Criteria and Guidelines).

TABLE 1

Contaminant	Media[1]	Detected Range	Representative Conc.[2]	Cleanup Guidelines A[3]	Cleanup Guidelines B[4]
Antimony	Soil	6-3510	15	1	30
Arsenic	Soil	1-80	11	7.5	80
	Water [5]	7.6	<1	25	25
Benzene	Soil	.04-.58	.08	.06	24
Benzo(a)pyrene	Soil	.05-47	1.2	.06	.06
Chromium	Soil	11-5140	263	17	400
Cyanide	Soil	1-285	<1	1	2000
Lead	Soil	6-55900	68	70	250
Manganese	Water	12-5210	1000	300	N/A
Naphthalene	Soil	.04-23	0.8	13	300
Polychlorinated Biphenyls	Soil [6]	.04-210	4	10/1	10
	Wipe	7-30400	3100	100	N/A
Toluene	Water	1-9	1	5	N/A
Zylene	Soil	.006-14	0.4	1.2	20,000

[1] Units for soil-ppm, water-ppb, wipe-ug/m^2
[2] The representative concentration is the concentration level within the detected range that would most likely be encountered
[3] Values based on NYSDEC/Division of Hazardous Waste Remediation TAGM #4046 (11/92)
[4] Values are USEPA Health-Based Standards (HEAST)
[5] Only one groundwater sample had detectable levels of arsenic
[6] Guidance value for surface soils (0-1 foot) is 1 ppm and subsurface soils (> 1 foot) is 10 ppm
N/A - Not Available

Public Health and Environmental Assessment - Contaminated Soils and Groundwater

A risk assessment was conducted to determine whether the contaminated soils found at the Schatz Plant Site could pose a significant threat to human health or the environment. Carrying out a risk assessment requires identification of the following:

- Contaminants of potential concern at the site and an evaluation of their toxicity
- Potential pathways of exposure, potentially exposed populations and risks associated with exposure

For risks associated with exposure to noncarcinogenic contaminants, the "Hazard Index" approach is used which is the ratio of predicted exposure levels to acceptable exposure levels. A Hazard Index greater than one (1) indicates that adverse noncarcinogenic effects may occur.

For carcinogenic contaminants, risks are calculated based on the frequency of exposure, contaminant concentrations and toxicity of contaminants. Risk is expressed as the number of cancers developed as a result of exposure to site contaminants per exposed population.

The primary contaminants of concern, along with their concentrations, are presented in Table 1. A detailed description of all contaminants present at this site can be found in the RI/FS. Potential pathways of exposure associated with the soil contamination have been identified as follows:

- Ingestion and dermal contact with site groundwater
- Ingestion and dermal contact with surface and subsurface soils

Noncarcinogenic Risk

The overall hazard index for current and hypothetical future residents is 1.4 and 3.0, respectively. This exceeds the USEPA target index of 1, indicating that the potential exists for adverse noncarcinogenic health effects from repeated, long-term exposure to soils. The chemicals responsible for these hazards include arsenic and chromium. Groundwater had a noncarcinogenic health threat (Hazard Index = 1.3) due to manganese and arsenic. However, since all area homes and businesses are provided with public water, exposure to contaminants in groundwater is not expected. In addition, neither manganese nor arsenic are attributable to the site and arsenic was present in only one sample at 7.6 ppb, well below the NYS Class GA standard of 25 ppb and the NYSDOH public drinking water standard of 50 ppb. Toluene was present in one sample of groundwater at 9 ppb, slightly exceeding the groundwater standard of 5 ppb. Again, because area residents are served by public water, exposure to toluene in groundwater is not expected.

Carcinogenic Risk

The overall carcinogenic risk for current and hypothetical future residents is two-in-one thousand (2/1,000). This risk exceeds the USEPA target risk range and is primarily due to repeated, long-term exposure to PCBs in dust and debris on the floor of Building No. 3, to PCBs, benzo(a)pyrene and arsenic in on-site soil and to arsenic in groundwater.

V. GOALS FOR REMEDIATION

The alternatives under consideration for remediation of the Schatz Plant Site, including the NYSDEC preferred alternative, must be in accordance with the New York State Environmental Conservation Law (ECL) and consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 USL Section 9601, et.seq., and as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA). The goal of the Feasibility Study is to select alternatives which meet the following seven screening criteria:

Overall Protection of Human Health and the Environment

This criterion will provide a final check to assess whether each alternative provides adequate protection of human health and the environment. The overall assessment of protection draws on the assessments conducted under other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness and compliance with applicable standards.

Evaluation of the overall protectiveness of an alternative will focus on whether a specific alternative achieves adequate protection and will describe how site risks posed through each pathway being addressed by the FS are eliminated, reduced, or controlled through treatment, engineering, or institutional controls. This evaluation will allow for consideration of whether an alternative poses any unacceptable short-term or cross media impacts.

Compliance with ARARs

This evaluation criterion will be used to determine whether each alternative will meet all identified federal and state requirements. The detailed analysis will summarize which requirements are applicable, relevant, and appropriate to an alternative and describe how the alternative meets these requirements.

Long-Term Effectiveness and Permanence

The evaluation of alternatives under this criterion will address the results of the remedial action in terms of the risk remaining at the facility after response objectives have been met. The primary focus of this evaluation will be the extent and effectiveness of the controls that may be required to manage the risk posed by treatment of residuals and/or untreated wastes. Such an evaluation is particularly important to all alternatives.

Reduction of Toxicity, Mobility, or Volume through Treatment

This evaluation criterion will address the regulatory preference for selecting remedial actions that employ treatment technologies which permanently and significantly reduce the toxicity, mobility, or volume of the contaminants. This preference is satisfied when treatment is used to reduce the principal risks at a site through destruction of contaminants, for a reduction of total mass of contaminants, to attain irreversible reduction in mobility, or to achieve reduction of the total volume of contaminated media.

Short-Term Effectiveness

This evaluation criterion will address the effects of the alternatives during the construction and implementation phase until remedial response objectives are met. Under this criterion, alternatives will be evaluated with respect to their effects on human health and the environment during implementation of the remedial action.

Implementability

The implementability criterion will address the technical and administrative feasibility of implementing an alternative and availability of various services and materials required during its implementation.

Cost

Detailed cost analysis of the selected remedial alternatives will include the following steps:

* Estimation of capital, operations and maintenance (O&M), and institutional costs;
* Present worth analysis.

Costs developed during the FS are expected to provide an accuracy of +50% to -30%

VI. SUMMARY OF THE EVALUATION OF ALTERNATIVES

This Proposed Remedial Action Plan (PRAP) will be limited to evaluating remedial alternatives which apply to the contaminated soil. DEC has not yet finalized its recommendations for the contaminated building surfaces. In addition, no remedial actions will be implemented with respect to the groundwater due to the limited impact from the site associated with this contamination. Also, a public water supply serves all residences and businesses in the area.

A. Initial Screening of Alternatives

The initial screening process compares and contrasts remedial alternatives based on two of the seven above described screening and evaluation criteria: effectiveness and implementability. Seven (7) remedial alternatives were considered for the Schatz Plant Site Contaminated Soil Area prior to initial screening. This list excludes technologies which were considered inappropriate and infeasible at the onset of the screening process. The reasons for eliminating these technologies are covered in detail in the Feasibility Study.

The seven (7) alternatives retained for consideration are numbered to correspond with the RI/FS report and are as follows:

Contaminated Soil Alternatives

1. No Action/Long-Term Monitoring;
2. Capping/Long-Term Monitoring;
3. Excavation/On-Site Solvent Extraction/Off-Site Disposal;
4. Excavation/On-Site Thermal Desorption/Off-Site Disposal;
5. Excavation/On-Site Incineration/Off-Site Disposal;
6. Excavation/Off-Site Incineration/Off-Site Disposal;
7. Excavation/Off-Site Disposal

Of the seven alternatives under consideration, only alternatives #3 (Excavation/On-Site Solvent Extraction/Off-Site Disposal) and #4 (Excavation/On-Site Thermal Desorption/Off-Site Disposal) failed the initial screening process because they do not meet the implementability criteria and will not be evaluated further. All others will be retained for detailed evaluation.

Those wishing to learn more about the initial screening process and the specific reasons for retaining or rejecting the above alternatives are encouraged to review the RI/FS.

B. Description of Contaminated Soil Alternatives Retained From Initial Screening

Alternative 1 - No Action/Long-Term Monitoring

No remedial action would take place under this alternative. If this option was followed, the contaminated soils would remain the same as they are at present. Long-term monitoring consisting of periodic site inspection, and groundwater sampling would be conducted to ensure that site conditions did not deteriorate. Health risks associated with ingestion, inhalation or dermal expo- ure to elevated organic (including PCBs) and inorganic contamination would continue to exist as no efforts would be made to remove or treat these constituents. Therefore, this alternative for site remediation would not be considered effective in protection of human health. As this alternative requires no action, it is readily implementable and would satisfy the short-term effectiveness criterion.

Alternative 2 - Capping/Long-Term Monitoring

This alternative would consist of the installation of a clay and topsoil cap or concrete cap over the area with PCB contamination in excess of 10 ppm. Surficial soil contaminated with PCBs at concentrations between 1 and 10 ppm and metal-contaminated soils would be consolidated into this area. The clay cap would include 18 inches of low permeability clay and 6 inches of topsoil seeded and mulched. A multi-layered hazardous waste cap was considered an excessive remedial measure during screening of capping technologies, as the total area of soil containing PCB contamination in excess of 10 ppm was relatively small (approx. 0.2 acres).

The clay or concrete cap would prevent the public from direct exposure to and inhalation of the PCB and metal-contaminated soil and dusts. Therefore, with limited maintenance, e.g. cap crack repairing and erosion control, the cap would provide long-term effectiveness. Based on the existing groundwater monitoring data, groundwater contamination due to leaching is not expected to be a concern. Alternative 2 would meet the short-term effectiveness criterion by providing some dust control such as wetting the ground surface during cap installation. However, the contamination would remain unchanged, and this alternative would restrict long-term land usage. Also, this option will alter the existing topography. This alternative is technically and administratively feasible. The materials, services and technologies required to implement Alternative 2 are readily available.

Alternative 5 - Excavation/On-Site Incineration/Off-Site Disposal

Alternative 5 consists of (1) excavation to remove all soils with PCB contamination in excess of 10 ppm, surficial soils (0-1 foot) in excess of 1 ppm and soils with elevated levels of metal contamination, (2) on-site incineration of soils with PCB contamination in excess of 50 ppm, (3) Remaining soil will be disposed of off-site in accordance with Solid and Hazardous Waste Regulations, and (4) backfilling the excavation with clean fill and/or incinerator ash.

The contaminated soils would be removed by conventional earth moving technology. Contaminated soil with PCB concentrations less than 50 ppm and elevated levels of metals would be disposed of off-site in accordance with Solid and Hazardous Waste Regulations. The volume of soil to be taken off-site is estimated to be 5200 yd^3. If determined to be acceptable, this contaminated soil may be consolidated with similar wastes at the Schatz Federal Bearing Landfill Site (314003) and subsequently remediated with this waste. The remaining soil which exceeds 50 ppm PCB, estimated at 3000 yd^3, would be incinerated on-site using a small portable incinerator.

Small mobile incineration systems are reliable, effective and well established for incinerating PCBs and other organic contaminants in soil. Emissions from thermal destruction would be treated through the use of air pollution control equipment to attain required air emission standards. The excavated soils would be placed at a temporary staging area which would be constructed using an impermeable liner and cover. Incineration of all contaminated soil at the site would require less than three months to complete at an anticipated processing rate of 2 to 5 tons per hour.

The excavated area would be backfilled with incinerator ash and/or clean-fill transported from a borrow site. Contaminated wastewater from excavation activities may have to be discharged to a sanitary sewer or an off-site wastewater treatment facility permitted for receiving or treating such waste streams. It is expected that the quantity of this water would be small based on the soil conditions (e.g., fine grained).

This alternative would be protective of human health and the environment as all contaminated soil with PCBs exceeding 50 ppm would be treated using on-site thermal destruction technology, thus destroying the PCBs. The remaining contaminated soils would be safely contained off-site. A health and safety plan would be followed during excavation and transportation to control dust and spills. Thus, both the short-term and long-term effectiveness criteria would be met. Alternative 5 is both technically and administratively implementable.

Alternative 6 - Excavation/Off-Site Incineration/Off-Site Disposal

Alternative 6 consists of (1) excavation to remove all soils with PCB contamination in excess of 10 ppm, surficial soils (0-1 foot) with PCBs in excess of 1 ppm and metal-contaminated soils, (2) off-site incineration of all soil with PCB contamination in excess of 50 ppm, (3) off-site disposal of the remainder of the excavated soil in accordance with Solid and Hazardous Waste Regulations, and (4) backfilling the excavation with clean fill.

The contaminated soils would be removed by conventional earth moving technology. It is estimated that the total amount of soil to be excavated would be 8200 cubic yards (assuming a depth to top of bedrock of 16 feet in the area of PCB contaminated soil). Of this volume, roughly 3000 cubic yards with PCBs in excess of 50 ppm would be classified as hazardous and transported and incinerated off-site. The remaining 5200 cubic yards of soil would be disposed of in an off-site landfill in accordance with Solid and Hazardous Waste Regulations. If determined to be acceptable, this remaining contaminated soil may be consolidated with similar wastes at the Schatz Federal Bearing Landfill Site (314003) and subsequently remediated with this waste. Backfill for the excavated area would be transported from a borrow pit. Contaminated wastewater would be discharged into a public sanitary sewer or taken to an off-site wastewater treatment facility permitted for treating such waste streams, depending on contaminant concentrations. It is expected that the quantity of this wastewater would be small based on the soil conditions (e.g., fine grained).

This alternative would be protective of human health and the environment as all known contaminated soil would be safely contained or treated off-site. A health and safety plan would be followed during excavation and transportation to control dust and spills. Thus, both the short-term and long-term effectiveness criteria would be met. Alternative 6 is both technically and administratively implementable.

Alternative 7 - Excavation/Off-Site Disposal

Alternative 7 consists of (1) excavation to remove all soils with PCB contamination in excess of 10 ppm, surficial soils (0-1 foot) with PCBs in excess of 1 ppm and soils with elevated metal contamination, (2) off-site disposal of the excavated material in accordance with Solid and Hazardous Waste Regulations, and (3) backfilling the excavation with clean fill.

The contaminated soil would be removed by conventional earth moving technology. The excavated soils would be transported to off-site landfills for disposal without treatment. It is estimated that the total amount of soil to be excavated could be 8200 cubic yards (assuming a depth to bedrock of 16 feet in the area of PCB-contaminated soil). Of this volume, roughly 3000 cubic yards exceed 50 ppm of PCBs. The remaining 5200 cubic yards of soil contains less than 50 ppm of PCBs as well as elevated levels of metals. Soil taken from the areas with contamination in excess of 50 ppm of PCBs would require disposal in a landfill permitted for hazardous waste. The remainder of the excavated soil would be disposed of off-site in accordance with Solid and Hazardous Waste Regulations. If determined to be acceptable, the remaining contaminated soil may be consolidated with similar wastes at the Schatz Federal

Bearing Landfill Site (314003) and subsequently remediated with this waste. Backfill for the excavated area would be transported from a borrow pit. Contaminated wastewater from excavation activities may have to be discharged to a sanitary sewer or taken to an off-site wastewater treatment facility permitted for receiving or treating such waste streams. It is expected that the quantity of this wastewater would be small based on the soil conditions (e.g., fine grained).

This alternative would be protective of human health and the environment as all contaminated soil would be safely contained off-site. A health and safety plan would be followed during excavation and transportation to control dust and spills. Thus, both the short-term and long-term effectiveness criteria would be met. Alternative 7 is both technically and administratively implementable.

C. Final Screening of Alternatives

In this section, the relevant information for the selection of a remedy is presented. Each of the alternatives retained by the screening process for the contaminated soil is evaluated with respect to the seven criteria specified on Pages 5 and 6. These criteria encompass regulatory requirements and include other gauges of the overall feasibility and acceptability of remedial alternatives.

A detailed analysis of all remedial alternatives presented in the previous section (Initial Screening of Alternatives) is presented in the RI/FS and only the costs for each alternative are presented here in Table 2 (below). Those wishing to learn more about the Final Screening process, including the quantitative alternative evaluation scoring method outlined in TAGM #4030, are encouraged to read the RI/FS.

TABLE 2

Remedial Alternative		Present Worth *
1.	No Action/Long-Term Monitoring	$ 81,000
2.	Capping/Long-Term Monitoring	412,000
5.	Excavation/On-Site Incineration/Disposal	4,446,000
6.	Excavation/Off-Site Incineration/Disposal	5,401,000
7.	Excavation/Off-Site Disposal	3,000,000

* Figures include capital costs, operation and maintenance costs and are based on a 30-year period.

D. Selection of the Preferred Alternative

The preferred remedial action for the Schatz Plant Site is Alternative #7, Excavation and Off-Site Disposal. A detailed assessment of the cost associated with this alternative is presented in Table 3.

Based on an evaluation of existing data, this remedial alternative, when compared to the other alternatives evaluated, best meets the response objectives as outlined in the RI/FS and best satisfies the seven screening criteria, meeting the NYS Superfund objective of protecting human health and the environment.

TABLE 3
Estimated Cost for Recommended Alternative
Contaminated Soil
Alternative #7 - Excavation/Off-Site Disposal

Description		# Units	Total Cost
MOBILIZATION/DEMOBILIZATION			$ 7,000
SITE PREPARATION			$ 197,910
EXCAVATION AND LOADING		8200 CY	$ 32,800
SAMPLING AND TESTING		77 Samples	$ 32,400
PERIODIC AIR MONITORING			$ 12,500
OFF-SITE DISPOSAL/TRANSPORTATION		8200 CY	$1,966,500
BACKFILL MATERIAL AND PLACEMENT		8200 CY	$ 48,391
CONTRACTOR'S MEETING AND REPORTS			$ 10,000
SUBTOTAL CAPITAL COSTS			$2,307,500
	Engineering 10.0%		$ 230,750
	Contingency 20.0%		$ 461,500
TOTAL CAPITAL COSTS			$2,999,751

E. Detailed Assessment of the Preferred Alternative

As part of the Final Screening of Alternatives, the preferred alternative was assessed based on the seven previously described criteria on Pages 5 and 6 including:

1. Overall protection of human health and the environment;
2. Compliance with ARARs;
3. Long-term effectiveness and permanence;
4. Reduction of toxicity, mobility, or volume;
5. Short-term effectiveness;
6. Implementability; and
7. Cost.

The following section provides a technical discussion of the preferred alternative as well as an assessment of this alternative with respect to these seven screening criteria. This discussion also includes a comparison of the preferred alternative with the other remedial alternatives which were considered but not selected. Those wishing to learn more about how all remedial alternatives compared based on these screening criteria are encouraged to refer to the RI/FS report.

Contaminated Soil Alternative #7 - Excavation and Off-Site Disposal

Alternative 7 consists of (1) excavation to remove all soils with PCB concentrations in excess of 10 ppm, surficial soils (0-1 foot) over 1 ppm and soils with elevated metal concentrations, (2) off-site disposal of the excavated material in accordance with Solid and Hazardous Waste Regulations, and (3) backfilling the excavation with clean fill.

The contaminated soil would be removed by conventional earth moving technology. To minimize cross contamination, the hazardous soil (with PCB concentration over 50 ppm) would be excavated first. The hazardous material would need to be transported to and disposed in a landfill permitted for hazardous waste disposal. The non-hazardous soil would then be removed. This soil would be disposed in accordance with Solid and Hazardous Waste Regulations. If determined to be acceptable, the nonhazardous contaminated soil may be consolidated with similar wastes at the Schatz Federal Bearing Landfill Site (314003) and subsequently remediated with this waste. Wastewater generated from soil draining after excavation would require disposal. If the contaminant concentrations are within applicable limits, the wastewater could be discharged into a public sanitary sewer. Otherwise, the wastewater would have to be discharged to an off-site wastewater treatment facility permitted for receiving or treating such waste streams. Clean fill would be transported from a nearby borrow site to restore this area back to grade. Following remediation, institutional controls would be implemented to prevent future disturbance of and potential exposures to any subsurface soils where PCB concentrations exceed 1 ppm.

Alternative 7 is evaluated with respect to the seven criteria as follows:

Overall Protection of Human Health and Environment

Alternatives 2, 5, 6 and 7 offer protection to both human health and the environment as they offer means of containing (Alternatives 2 and 7) or treating (Alternatives 5 and 6) the contamination. Therefore, potential exposure to the contaminants is minimized. The No Action alternative may impact the environment over time.

The preferred alternative (#7) would provide overall protection of human health and the environment. All of the known subsurface soils with PCBs over 10 ppm, surficial soils (0-1 foot) with PCBs above 1 ppm and soils with elevated levels of metals would be removed and disposed off-site. Potential exposure to contaminants via the air and soil routes would be significantly reduced by the excavation and disposal technologies. Institutional controls would be imposed on those subsurface soils with residual PCB contamination exceeding 1 ppm.

Compliance with ARARs and SCGs

All alternatives to remediate the contaminated soils would meet the action-specific SCGs. No location-specific SCGs would be triggered by any of the alternatives. Alternatives 5, 6 and 7 would meet chemical-specific SCGs for soil and air exposures by treating or disposing the waste soil off-site. Alternative 2 would cap the waste so chemical-specific SCGs would be of little risk concern. The No Action alternative would not meet the chemical-specific SCGs for soil exposure. For the chemical-specific SCGs for groundwater, there is little risk concern as previously described. Therefore, groundwater chemical-specific SCGs are considered met by all alternatives.

The preferred alternative (#7) would comply with all the soil and air (dust) SCGs. Several action-specific SCGs concerning the handling and disposal of waste materials would apply to this alternative, including TSCA, RCRA and New York State regulations specifying transportation and disposal performance standards, monitoring and closure. These action-specific SCGs would be met by this alternative based on the removal of all known soils with PCBs over 10 ppm, surficial soils (0-1 foot) with PCBs above 1 ppm and soils with elevated levels of metals. OSHA regulations and safety requirements would be followed during the remedial activities.

Long-Term Effectiveness and Permanence

Alternatives 1 and 2 are not very effective at providing long-term protection to human health and environment. Operation and maintenance requirements would be comparable for both alternatives. Alternatives 5, 6 and 7 are effective means of ensuring long-term protection to both human health and the environment, because all of the contaminated soils would be treated or excavated and properly disposed off-site.

The preferred alternative (#7) significantly reduces the mobility of contaminants by off-site landfilling. With the exception of residual PCB contamination in subsurface soils (between 1 and 10 ppm), this remedial action is a permanent remedy because contamination is removed from the site. Potential exposure pathways (e.g., ingestion and inhalation) would be controlled by the soil removal and disposal technologies. No operation, maintenance and monitoring at the site would be required following implementation of Alternative 7 as potential exposure pathways would be safe to the public and environment. However, institutional controls would be implemented which would restrict potential exposure to residual subsurface PCBs which exceed 1 ppm.

Reduction of Toxicity, Mobility or Volume

Alternatives 2 and 7 would reduce mobility by providing isolation and preventing direct exposure to contamination by humans or the environment by capping over the contaminated area and excavating and disposing off-site, respectively. However, toxicity and volume of the contaminants in the soil are not reduced. Alternatives 5 and 6 offer a means of reducing toxicity, mobility and volume of contamination as all hazardous soils would be destroyed by incineration. The No Action alternative does not reduce the toxicity, mobility or volume of hazardous soil at the site.

Off-site landfilling would significantly reduce the mobility of contaminants by securely containing all contaminated soils. The toxicity and volume of these soils, however, would be unaffected. The remaining soils are not considered toxic or hazardous to the public or environment.

Short-Term Impacts and Effectiveness

There are no significant short-term risks to the community or environment associated with any of the alternatives evaluated for the contaminated soils, as long as possible dust emissions during excavation, transportation and disposal of the soil is properly controlled. A health and safety plan would be followed during excavation and transportation off-site to control dust generation and spills, and to minimize potential work exposure to waste constituents. Ambient air monitoring would be performed to monitor particulate emissions during remeidation. The construction area can be wetted if needed to minimize particulate emissions.

Implementability

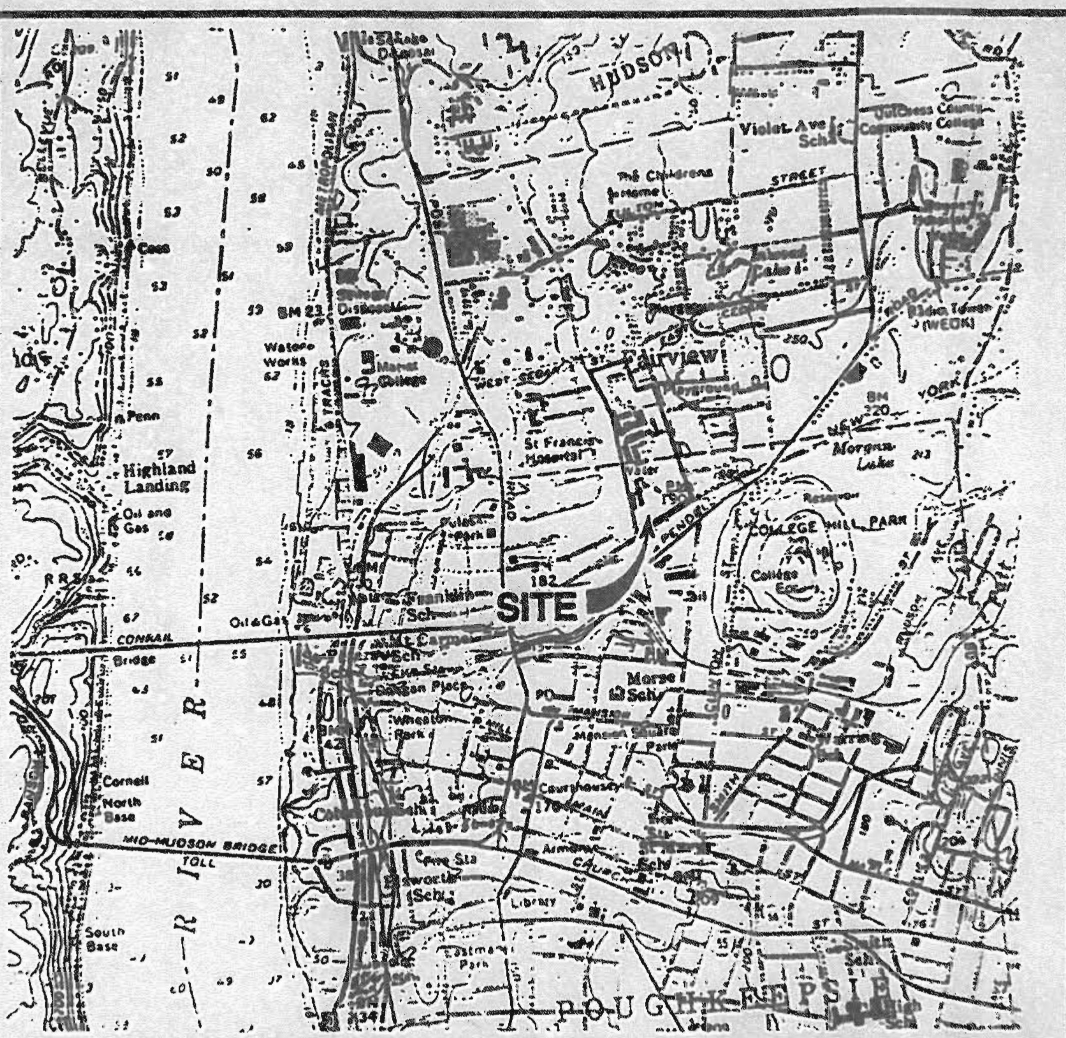
All five alternatives meet minimum technical feasibility, administrative feasibility and availability components of the implementability criterion. The services and materials required to implement these alternatives are readily available. Alternatives 5 and 6 received the lowest implementability score due to the limited capacity of available hazardous waste incinerators.

Alternative 7 meets the technical feasibility, administrative feasibility and availability components of the implementability criterion. This alternative is implementable from an engineering standpoint. All technologies required are conventional and proven.

Cost

Costs for the five alternatives are summarized in Table 2. The least costly alternative is the No Action alternative. The most expensive alternative is Alternative 6, which includes excavation, off-site incineration and disposal of the contaminated soil. Alternative 2 is approximately five times as expensive as the No Action alternative. Alternative 7 is approximately 1.4 to 2.4 million dollars less expensive than incineration alternatives #5 and 6.

The detailed analysis for Alternative 7 was prepared using an underlying set of assumptions that include 8,200 cubic yards of soil to be excavated, of which 3,000 cubic yards will require disposal as a hazardous waste. The estimated construction costs to be incurred by Alternative 7 is $3,000,000.00 which is also the total present worth cost of this alternative as no annual operation and maintenance would be required. It is quite possible that additional soil analysis during design will show less contamination and the cost could be much lower. The cost estimate of this alternative is provided in Table 3.

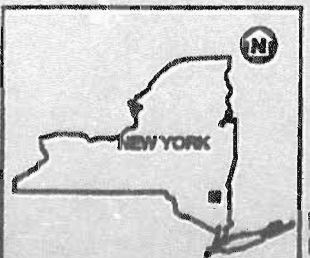


BASE MAP : U.S.G.S. 7.5 TOPOGRAPHIC MAP
POUGHKEEPSIE, NEW YORK (1982)

SCALE

0 2000 4000 FT.

2000 FT.



QUADRANGLE LOCATION

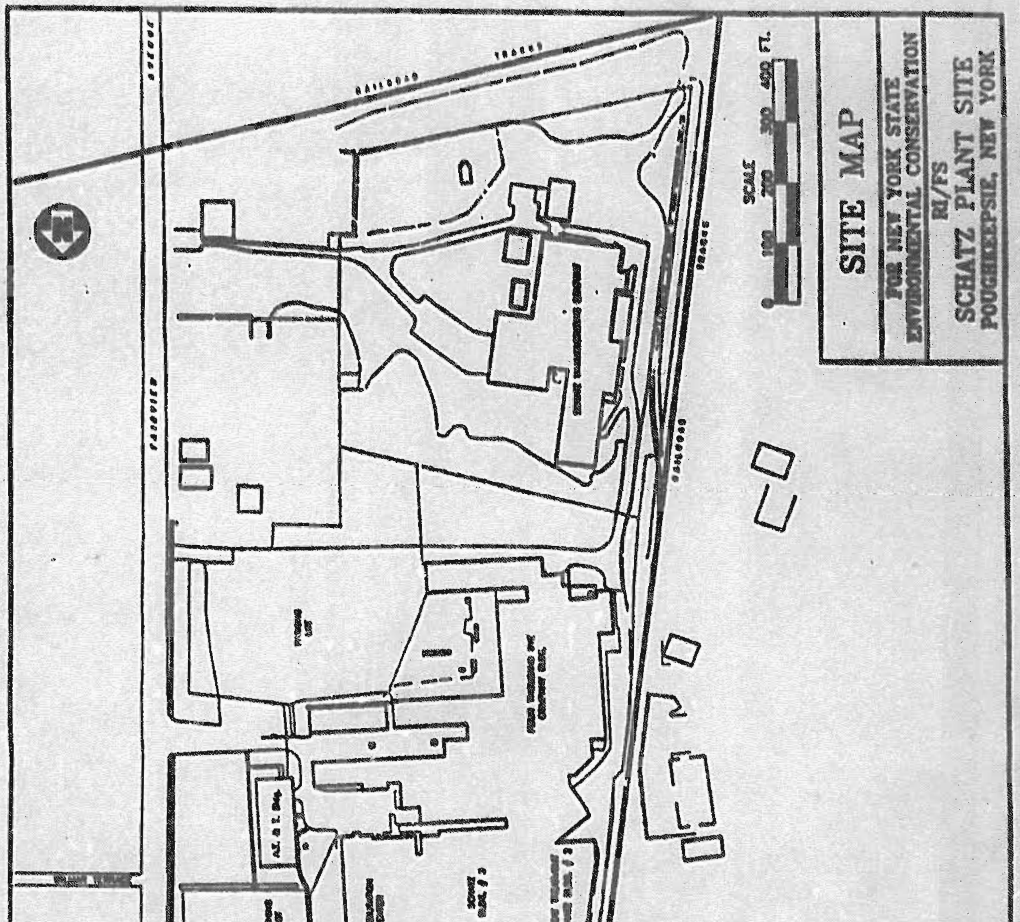
LATITUDE : 41° 43' 00"
LONGITUDE : 73° 55' 20"

ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
RI/FS

SITE LOCATION

SCHATZ PLANT
POUGHKEEPSIE, NEW YORK


SITE MAP
FOR NEW YORK STATE
ENVIRONMENTAL CONSERVATION
RI/FS
SCHATZ PLANT SITE
POUGHKEEPSIE, NEW YORK
SCALE
0 100 200 300 400 FT.
LEGEND
SPRING
PARKING LOT
BALL FIELD
FAIRVIEW
AVENUE
RAILROAD
TRACKS
ES ENGINEERING-SCIENCE