Department of Environmental Conservation

Division of Hazardous Waste Remediation

Abe Cooper Surplus Company Site

Site Number 6-23-006
City of Watertown
Jefferson County, New York

Record of Decision

October 1994

New York State Department of Environmental Conservation

ABE COOPER SURPLUS COMPANY SITE
CITY OF WATERTOWN, NEW YORK
SITE NO.: 6-23-006

RECORD OF DECISION
OCTOBER 1994

PREPARED BY:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

DECLARATION STATEMENT - RECORD OF DECISION

Abe Cooper Surplus Company Site
City of Watertown, Jefferson County, New York
Site No. 6-23-006

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Abe Cooper Surplus Company Inactive Hazardous Waste Disposal Site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Abe Cooper Surplus Company Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix A of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/ Feasibility Study (RI/FS) for the Abe Cooper Surplus Company Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected the following remedy for the Site:

Modification of Alternative F:

** The site will be prepared by removing debris, clearing and grubbing.

** Decontamination of the hydraulic shear, hydraulic press and related sumps and vaults will be accomplished by high pressure water washing and steam cleaning. The equipment will then be removed from the site.

** Site preparation will be followed by excavation of all hot spot soils, including all soils meeting the definition of

hazardous wastes, those soils contaminated with PCB concentrations of 10 ppm or greater and all soils in the trench area contaminated with petroleum hydrocarbons.

** The soils containing more than 500 ppm of lead in the Factory Street portion of the site will be excavated and the area backfilled. Confirmatory samples will be taken during construction to determine the levels of contaminants of concern left in the unexcavated soils. Any unexcavated soils will be covered with at least one foot of clean fill and seeded.

** The central portion of the site will receive non-hazardous overburden from the Factory Street portion and from the riverbank area. This central area will then be graded, compacted, and covered with 6 inches of clean backfill, 6 inches of topsoil, then seeded and mulched.

** The slope of the riverbank will be regraded to a more gentle slope. Eighteen inches of riprap will be installed, underlain by a layer of filter fabric.

** Deed restrictions or other institutional controls will be implemented to limit construction activities on the restricted use portion of the site (central portion). The Factory Street portion of the site may not require any restrictions on reuse except those required by local ordinances.

The estimated capital cost for the remedy is: $1,847,000.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that reduce toxicity, mobility, or volume as a principal element.

September 5, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner

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ILLUSTRATIONS

SECTION 1: SITE LOCATION AND DESCRIPTION

The Abe Cooper site occupies approximately 4.2 acres between the Black River (a Class C waterbody) and Factory Street in Watertown, Jefferson County, New York (see Figures 1 and 2). The topography of the site generally slopes from south to north toward the Black River.

The Abe Cooper Surplus Company Site contains 700 linear feet of Black River shoreline adjacent to the site. At this point, the Black River is approximately 290 feet wide, 2 to 4 feet deep and has a silt and mud substratum. The average river flow is 4000 cubic feet per second (cfs).

The level of the Black River in this vicinity is regulated by the dam immediately downstream from the site. The dam raises or lowers the river level by as much as twelve feet. This dramatically changes the direction of groundwater flow on the Abe Cooper Site, as the river changes from a gaining to a losing stream.

The northern edge of the site is a relatively flat plateau along the Fairbanks Street right-of-way (ROW) that was built up by filling abandoned building foundations between the street and the Black River. The riverbank is very steep and drops 15 to 20 feet along the northern perimeter of the property. Stone and brick foundations, along with remnants of a concrete water flume associated with former operations at the H.H. Babcock Carriage Works (see subsection 3.1), are clearly visible at the river's edge.

Most of the scrap yard is open space, although heavy brush and some trees line the site on the north and west. The yard is fenced on the east, west, and south; the very steep riverbank effectively limits access from the north. "Private Property" and "No Trespassing" signs are posted along fences; gates are locked at all times.

The scrap yard operations were primarily confined to the fenced area, which was the focus of the Remedial Investigation.

Most property use adjacent to the site is commercial. A variety of small storefronts and shops, some with second-and third-story apartments, line the south side of Factory Street. Single-family housing is located to the north, across the Black River, on a bluff 20 to 40 feet above the elevation of the scrap yard. Several brick buildings located to the east of the site were part

of the original Factory Square Complex. These buildings now house a scrap recycling business and several dry goods wholesale and storage operations.
Full public utility services, including water and sewerage, are provided to this neighborhood by the City of Watertown.

SECTION 2: SITE HISTORY

The following is a chronological history of the site and the remediation project:

2.1: Operational/Disposal History

1880's

The Abe Cooper site was first developed in the mid-1880s as part of the H.H Babcock Carriage Works. The carriage works was one of a number of facilities in the site area collectively known as the Factory Square Complex. Records indicate that as many as 25 buildings may have occupied Factory Square. Consequently, the site may be of archeological significance.

The only carriage works structure remaining on the property is a three-story brick building at the corner of Factory Street and Factory Square (see Figure 2).

1940 thru 1989

The Abe Cooper Surplus Company, a scrap metal processing and recycling company, occupied the site from the early 1940s until the business filed for bankruptcy in 1989. The site is now inactive, and the Abe Cooper Estate retains ownership.

The primary activity at the scrap yard was stockpiling and segregating scrap materials including ferrous and nonferrous metals, mechanical, electrical, and hydraulic equipment components, various grades of wire, and an assortment of processed parts such as motors, compressors, condensers, gears, couplings, and housings. Steel drums were used extensively for sorting and material handling functions.

A containment pond for draining oil from lubricated metal turnings was constructed on the western end of the site in 1983. This pond has a multiple layer polyethylene liner system. The pond was cleaned out and used for waste drum storage as part of the Interim Remedial Action (IRM) discussed later in this document.

Permanent structures and equipment on the site that were associated with scrap yard operations include an office trailer, a truck scale, a hydraulic shear, and a hydraulic bale press. The shear and bale press were the main area of scrap operations and consequently are located in the area of greatest contamination.

2.2: Remedial History

1986 thru 1988

A preliminary investigation was conducted by the site owners as part of a planned property transfer. Three borings were drilled on site to depths ranging from 6.5 to 18 feet below ground surface (BGS). Two overburden monitoring wells were installed at depths of 12 and 18 feet and sampled. PCBs and various inorganics were detected at levels exceeding groundwater standards.

In addition to groundwater, soil samples were collected. Three of the six surface soil samples near the hydraulic shear contained PCBs at concentrations ranging from 2.4 to 56 parts per million (ppm). Two of the three samples collected in other areas of the site were analyzed for EP Toxicity, and contained leachable concentrations of lead. One sample leached more than 5 milligrams per liter (mg/l) of lead which defines a hazardous waste.

Voluntary disclosure of site conditions by the Abe Cooper Watertown Corporation to NYSDEC led to its listing on the Registry of Inactive Hazardous Waste Disposal Sites. Consent Order negotiations were pursued by attorneys for the State and resulted in the site owner, as responsible party, undertaking remedial action.

April 1988 thru May 1988

A drum inventory was conducted by the responsible party during April through May, 1988. 852 drums containing 2,000 gallons of liquids and solids were inventoried and sorted by waste category.

Soil beneath a broken capacitor, lying near the hydraulic shear, contained PCBs at a concentration of 110,000 parts per million (ppm). This capacitor and several other intact capacitors and underlying soils were packed in two steel drums. The excavated areas were lined with polyethylene and backfilled in anticipation of further soil testing.

June 1988

The Abe Cooper Estate signed an Order on Consent in June, 1988 with NYSDEC. The consent order directed the Abe Cooper Estate to perform a Remedial Investigation and Feasibility Study (RI/FS) and to implement a remedial program, including an Interim Remedial Measure (IRM) that would remove the waste drums from the site.

May 1989 thru November 1989

The drum removal was completed between May and November, 1989. Wastes were removed from the site as bulk liquids, drummed liquids, or solids in quantities as follows:

- Flammable Liquids - 4,600 gallons bulk liquid and one 55-gallon drum;
- Combustible Liquids - 5,747 gallons bulk liquid;
- Corrosive Liquids - Twelve 55-gallon drums; and
- PCB Solids - 4,150 pounds in eight drums.

The waste manifests indicate that the solids disposed off site contained more than 500 ppm of PCBs.

September 1989

A work plan for an RI/FS was submitted to and approved by NYSDEC in September 1989. However, the RI/FS was never begun, and the Regional Attorney was informed that the Abe Cooper Estate had insufficient resources to complete the project.

August 1990

On August 20, 1990, the site was officially referred for an RI/FS to be funded by State Superfund monies; a standby consultant was assigned to the project in February, 1991.

SECTION 3: CURRENT STATUS

The NYSDEC, under the State Superfund Program, initiated a Remedial Investigation/ Feasibility Study (RI/FS) in **February 1991** to address the remaining contamination at the site. The Remedial Investigation and Feasibility Study (RI/FS) have been completed. A Final FS Report was prepared in May 1994 and

outlines the evaluation of remedial alternatives for the site. A Proposed Remedial Action Plan was issued on August 3, 1994, and a public meeting was held August 17, 1994 in the City of Watertown. The 30 day public comment period ended on September 2, 1994.

3.1: Summary of the Remedial Investigation

Remedial Investigation

Remedial Investigation (RI) field activities were performed at the Abe Cooper site periodically between July 1991 and June 1993. A final edition of the RI Report was issued in April 1994. It describes the field activities and findings of the RI in detail.

The primary objectives of the field investigation were to:

- Determine the nature of on-site contamination;
- Determine the geologic and hydrogeologic characteristics of the site that may affect contaminant migration; and
- Assess the possible migration of contaminants off site.

The field tasks (and associated data assessment tasks) performed to meet these objectives consisted of the following:

1. **Surface soil sampling**

In July 1991, NYSDEC conducted a preliminary site screening. Surface soil samples for PCB analysis were collected on a fifty foot grid across the site, in addition to twenty surface soil samples from stained or suspect locations. See Figure 3. A total of 77 of the 82 samples contained PCBs at concentrations ranging from 30 to 62,000 micrograms/kilogram (ug/kg). A thousand (1000) ug/kg is approximately 1 part per million (ppm).

Two samples contained PCBs at more than 50 ppm. The presence of PCBs above 50 ppm defines a hazardous waste. One sample was located near the abandoned concrete foundation and the other was located near the former containment pond in the western part of the site.

Five other samples had PCB concentrations greater than 10,000 ug/kg (10 ppm); these 7 samples were located in two areas of the site:

- Around the hydraulic shear (four samples);

- Near the former turnings area and former containment pond (one sample);

In August 1992, NYSDEC collected 28 surface soil samples for metals analysis on a 100-foot grid across the site and 8 off-site background samples. Concentrations of nine metals, including lead, antimony, chromium, copper, iron, manganese, mercury, nickel and zinc, were found to be significantly higher on site than off site. Evaluation of background samples indicated that concentrations of certain metals especially lead, are substantially higher than natural background concentrations. Of the metals found at elevated concentrations on site, lead is the most significant. Lead was detected in the range of 209 ppm to 14,600 ppm, with 21 of 28 samples exceeding the US Environmental Protection Agency's interim health guidance level of 500 ppm for residential soils. Mercury was also detected significantly above normal background levels.

The highest concentration of metals of concern occur in: (1) the south-central portion of the site, (2) west of the hydraulic shear in the area to the north, and (3) northwest of the abandoned firehouse adjacent to the site. Five of six other metals with concentrations exceeding health criteria (arsenic, beryllium, lead, and mercury) also occur in this area. See Figure 4.

2. **Riverbank Sampling**

In June 1993, six surface soil samples were collected from along the bank of the Black River at the high water mark. This served to characterize fill materials on the riverbank and to provide information about potential migration of contaminants into the Black River from erosion during high water events. Riverbank samples were analyzed for Volatile Organic Chemicals (VOC), PCBs, and metals, including lead, arsenic, antimony, beryllium, copper and lead. PCBs were detected in the range of 0.02 to 8.4 ppm. Lead was detected in three of the six samples in the range of 2,412 to 5,497 ppm. Elevated levels of arsenic and mercury above background levels were also found.

3. **Sampling in the Hydraulic Press**

Two composite sludge samples were collected from the floor of the basement beneath the hydraulic press. Samples were analyzed for PCBs and Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics. Total PCBs were well below 50 ppm at concentrations of 6.9 ppm to 7.7 ppm. There was no significant measurable toxicity, corrosivity, reactivity or ignitability.

4. **Subsurface Soil Sampling**

Seventeen borings were installed in 1992 in areas of previously documented contamination. No native soils were identified in the overburden on the site. Various fill materials were present: sandy silt with gravel and debris such as fragments of metal, brick, cinders, mortar and asphalt. The thickness of the fill overlaying bedrock ranged from 1 to 18 feet deep.

Soil samples, collected every 2-feet, were analyzed for PCBs, VOCs, and Toxicity Characteristics Leaching Procedure (TCLP) metals including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. A total of 32 subsurface soil samples were analyzed. The results are portrayed on Figure 5.

PCBs were detected in 24 of the 32 samples at concentrations ranging up to 59 ppm. Only one subsurface sample contained PCBs at a concentration (59 ppm) greater than 50 ppm. This sample was located by the shear. Four samples contained concentrations of PCBs greater than 10 ppm, but less than 50 ppm; and 10 samples were greater than 1 ppm but less than 10 ppm.

Very low levels of volatile substances (less than 1.0 ppm) were detected in 19 of 32 subsurface soil samples.

TCLP tests for barium, cadmium, chromium, and lead were performed on soil samples from the borings. One sample leached lead at 9.8 ppm in excess of the RCRA regulatory limits of 5 mg/l of lead which defines a hazardous waste. This sample was located in the west-central part of the site.

In addition to the 17 borings, four trenches were excavated to investigate suspected sites of underground storage tanks. During excavation of Trench 1, a layer of darkly stained soil with a petroleum odor was encountered at approximately 2.5 feet below the surface. This soil was analyzed and found to contain toluene, xylene and total petroleum hydrocarbons (TPH) which indicated a past petroleum spill. The xylene concentration was 100 ppm.

5. **Groundwater Investigation**

Five monitoring wells are located on the Abe Cooper Site. Of the five wells, four were installed in April, 1992; one well that had been installed in 1986 by the site owners was preserved for use in the RI.

Well pairs were located near the Black River in two locations. The fifth well was a single bedrock well, near Factory Street, that was installed in order to act as an upgradient well. A corresponding, upgradient, overburden well was not installed because the overburden was too shallow and was unsaturated. During the RI/FS field work, no continuous zone of saturated overburden was found except in the vicinity of MW-2.

Four of the five monitoring wells were sampled for volatiles, semi-volatiles, metals and PCBs. Sufficient sample volume for all the above analyses was not collected from MW-1S. This well does not appear to be located in a saturated formation; recharge was extremely slow, and standing water in the well was limited to less than 6 inches during sampling.

Table No. 1 summarizes the significant parameters (and corresponding standards) measured in the groundwater on site. Generally, the three bedrock wells met standards except for constituents such as iron, manganese and sodium. The groundwater extracted from overburden wells contained low levels of contamination, but exceeded standards for cyanide and trichloroethylene.

7. **Air Sampling**

Air sampling was conducted during the RI to determine ambient concentrations of PCBs and particulate matter at three locations around the hydraulic shear. Sample collection was performed for a 24 hour period.

PCBs were detected in two samples (located 10 feet and 60 feet downwind of the hydraulic shear) at concentrations of 39 nanogram per cubic meter (ng/m^3) (an average air concentration over a 24 hour period) and 18 ng/m^3. These levels are within the 100 ng/m^3 short term guidelines, but would be of potential health significance if present on a long term basis (see Subsection 3.2, Summary of Human Exposure Pathways).

8. **Water Balance Study**

A water balance study was performed for the site in order to quantify the estimated mass contaminant loading to the river from the on-site groundwater discharge. Conservative estimates were obtained by using the contaminant concentrations found in the overburden groundwater.

Even these conservative estimates indicate that discharge of groundwater from the site to the Black River does not significantly affect receiving water quality.

9. **Habitat-Based Ecological Assessment**

Terrestrial and aquatic ecosystems were characterized by listing significant and typical species populating the site vicinity. The overall assessment of the site as a wildlife habitat was determined to be "fair". The presence of the river and good vegetative cover on the riverbank balanced out the urbanized nature of the site that supports little native vegetation.

The aquatic habitat adjoining the site sustains a variety of fish species including important game fish (walleye, small mouth bass and northern pike). However, in the stretch of the river which includes this area of Watertown, PCBs from upstream sources are found at high levels in river sediments and fish flesh.

3.2 Summary of Human Exposure Pathways:

A limited Baseline Human Health Risk Assessment was conducted to evaluate the risks associated with the contamination present at this site.

The results of this risk assessment, in combination with the results of the RI/FS, were used to identify applicable remedial alternatives and to select a remedy.

The Baseline Health Risk Assessment estimates the site-related health risks that may occur if no remedial actions are performed and if no steps are taken to reduce human exposure.

The objectives of the human health risk assessment for the Abe Cooper Site were:

- to identify potential pathways of exposure for human "receptors";
- to quantitatively estimate the exposures that could occur; and
- to estimate the potential risks to human health associated with these exposures.

Exposure Routes are the mechanisms by which contaminants may enter a human body (e.g. inhalation into the lungs, ingestion into the digestive system, absorption by eyes and skin into the circulatory system).

Exposure Pathways are the environmental media (e.g. groundwater, soil, air) through which contaminants are transported. The remedial plan that is finally selected for the Abe Cooper Surplus Company Site must be protective of both public health and the environment.

The selected remedy for the Abe Cooper Surplus Company site must address the following potential exposure pathways in order to assure protection of the public health from the site-related contaminants.

- Direct contact (dermal contact and incidental ingestion via hand-to-mouth contact) with contaminated surface soils;
- Inhalation of airborne particles from wind erosion of bare soil; and
- Inhalation of PCB vapors emanating from the contaminated equipment and soil.

Following are the results of the risk assessment for the worst case scenario at the Abe Cooper Surplus Company Site. Worst case means that a human population is exposed for 30 years to 95% of the maximum concentration of contaminants that were detected in the soils on-site left unremediated. This is a conservative methodology used to assess risks at all hazardous waste sites in a consistent manner.

Under the worst case of existing site conditions, the estimated cancer risk to nearby off-site residents was estimated as 1 to 7 additional cases of cancer in a theoretical population of 1 million people exposed to the unremediated contamination for 30 years. Approximately 90-95 percent of this risk was due to possible inhalation of PCB vapors emanating from contaminated site surface soil or from contaminated equipment. The other 5-10 percent was due to particulate inhalation of arsenic.

The Planning Department of the City of Watertown, has indicated that it is very unlikely the site would be used for residential development. Rather, the site is within a proposed Economic Development Zone and would be a prime location for commercial or industrial development.

The estimated potential cancer risk for the worst case scenario for future site workers was estimated at 40 additional cases of cancer in a theoretical population of 1 million on-site workers. This risk was due to inhalation of contamination, ingestion of contamination or dermal contact with contaminated soil. PCBs were responsible for the majority of increased risk, with smaller

increases of the risk caused by the presence of arsenic and beryllium contamination in surface soils.

These potential increased human health risks exceed the acceptable risk range, and therefore, site remediation is warranted.

3.3 Summary of Environmental Exposure Pathways:

The Watertown segment of the Black River supports an important recreational warm water/cool water fishery in urban and suburban area. More than 8000 anglers fish the Black River in Jefferson County. High levels of PCBs have been found in fish flesh and bottom sediments along a 35-mile stretch of the river that includes the City of Watertown,

There is one significant pathway of environmental exposure from the site into the Black River. Contaminated soils along the riverbank erode into the river during spring flooding. This warrants stabilization of the riverbanks on-site.

SECTION 4: ENFORCEMENT STATUS

The Potential Responsible Party (PRP) for the Abe Cooper Surplus Company Site is the Estate of Abe Cooper. During 1987, voluntary disclosure of site conditions by the Abe Cooper Watertown Corporation to the Department of Environmental Conservation led to the listing of the site as a Class 2A on the Registry of Inactive Hazardous Waste Site Disposal Sites. Consent order negotiations were successfully completed, and in 1988, the PRP funded a drum inventory project.

On June 8, 1988, following the drum inventory, the Abe Cooper Estate entered into an Order on Consent with NYSDEC for an Interim Remedial Measure (IRM) to remove drums and waste from the site and for an RI/FS to evaluate the extent of contamination and to evaluate remedial alternatives. The site was reclassified to a Class 2 site after confirmation of the presence of substantial quantities of hazardous wastes. The responsible party removed large amounts of hazardous liquids and wastes from the site during 1989. The PRP funded approximately one million dollars of remedial work at the site. However, in January 1990, the PRP informed the Regional Attorney that they had insufficient funds to complete an RI/FS. Later that year, the site was referred for a state funded RI/FS.

In 1993, the Assistant Attorney General negotiated a settlement whereby the Estate of the Abe Cooper (PRP) paid $100,000 to the State of New York. The PRP also agreed to sell the property, once remediation was complete, and transfer net proceeds from the

sale to the State. Implementation of the remedy will now be performed with State funds. This settlement does not preclude the State from taking cost recovery actions against other parties that may be identified in the future as having some responsibility for the contamination at the site.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standards, 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 Remedial Investigation of the site determined that groundwater was not a significant pathway for exposure of human populations or the ecosystem of the Black River. Air and soil were determined to be the major exposure pathways.

The human health risk assessment determined that the "Chemicals of Potential Concern (COPCs) in the soils of the Abe Cooper site are:

(1) PCBs
(2) lead
(3) mercury
(4) antimony
(5) arsenic
(6) beryllium, and
(7) copper

The primary chemical of concern present in the air is PCB (vapors and particulates).

The purpose of remedial action objectives is to eliminate exposure to chemicals of potential concern such that human health and the environment are adequately protected. This is achieved either by eliminating exposure pathways or by reducing contaminants to concentrations in environmental media (soil and air) that are adequately protective of human health or environmental quality.

The following remedial action objectives were formulated for the site by NYSDEC and NYSDOH:

- Protect the Black River by controlling erosion of soils contaminated with PCBs and heavy metals from the riverbank and the site.

- Remove all soils highly contaminated with xylenes and petroleum hydrocarbons.

- Remove all wastes from the site that meet the definition of hazardous waste.

- Prevent human exposure to site contamination in surface soil by achieving the following additional cleanup objective in surface soils;

  - Lead - 500 mg/kg;
  - Arsenic - 16 mg/kg;
  - Beryllium - 1 mg/kg;
  - Mercury - 0.6 mg/kg;

- Limit future human exposure to site contamination in sub-surface soils by achieving the following cleanup objectives in the Factory Street portion;

  - Lead, 500 mg/kg

- Prevent future human and environmental exposure to site contamination in the subsurface by;

  - Limiting future site activities with deed restrictions and/or institutional controls, if necessary, in order to prevent surface erosion or disturbance of the site that would expose or cause deposition of contaminated subsurface soils.

SECTION 6: SUMMARY OF THE EVALUATION OF REMEDIAL ALTERNATIVES

Potential remedial alternatives for the Abe Cooper Surplus Site were identified, screened and evaluated in a three phase feasibility study. This evaluation is presented in the report entitled Feasibility Study Report, Abe Cooper Surplus Company Site, City of Watertown, May 1994. Six remedial alternatives were evaluated to fulfill the remedial goals for the site.

Subsection 6.1: Description of the Six Alternatives for Remediation

The alternatives for the remediation of the Abe Cooper Surplus Company Site which were evaluated in detail are:

Alternative A: No Action (No additional remediation)

Alternative B: Hot Spot Excavation, Soil Cover, Concrete Riverbank Protection, and Equipment Decontamination

Alternative C: - Hot Spot Excavation, Impervious Cover, Concrete Riverbank Protection, and Equipment Decontamination

Alternative D: - Hot Spot Excavation Plus Site-wide Excavation to 1 Foot Below Ground Surface (BGS), Concrete Riverbank Protection, and Equipment Decontamination

Alternative E: - Hot Spot Excavation Plus Site-wide Excavation to 6 Feet BGS, Riprap Riverbank Protection, and Equipment Decontamination/Removal

Alternative F: - Excavation to Bedrock along Factory Street, Hot Spot Excavation, Soil Consolidation, 1-Foot Soil Cover on middle of site, Riprap Riverbank Protection and Equipment Decontamination/Removal

Alternative A: No Action

Costs:

Capital Cost: (Initial Construction Costs)	$ 24,000
Annual Operations & Maintenance Cost:	$ 13,000
Present Worth, O&M:	$ 190.000
Total Capitalized Cost:	$ 214,000

The "No Action" alternative was retained for detailed evaluation in order to provide a baseline against which the other 5 alternatives were compared. "No Action" would leave the site's soils and riverbanks in their present state. The "No Action" alternative would include maintenance of the fence, potential deed restrictions, and implementation of a groundwater monitoring program to determine trends in water quality.

Access to the riverbank and to the whole site would be restricted by fencing. "No Action" would also leave the hydraulic shear and hydraulic press contaminated, fencing would be installed around the equipment to limit access to contaminated surfaces. Restrictions would be placed on use of both the site and use of the on-site groundwater either through possible deed restrictions

or other institutional means.

A 30 year period for monitoring and maintenance is assumed for costing purposes. Capital costs are limited to installing two additional monitoring wells and/or repairs to the fencing. Monitoring costs are for sampling 7 wells twice per year for metals, PCB and volatile chemicals.

Alternative B: Hot Spot Excavation, Soil Cover, Concrete Riverbank Protection, and Equipment Decontamination

Costs:

Capital Costs:	$ 1,372,000
Operation and Maintenance:	$ 14,900
(Annual Costs)	
Present Worth, O&M:	$ 205,000
Total Capitalized Cost:	$ 1,577,000

This alternative includes excavation of all hot spot soils; installation of a soil cover; placement of concrete riverbank protection; decontamination of the hydraulic press, hydraulic shear, and related sumps/vaults; and groundwater monitoring. The large concrete pad in the center of the site is not expected to be contaminated. The pad would be tested and if the concrete was not significantly contaminated, it would be left on site. The soils underneath the concrete would also be tested to determine appropriate disposal methods.

The site preparation phase for the Abe Cooper Surplus Site would be extensive and would include removal of all debris from the site, clearing and grubbing of vegetation, reconditioning of the existing site scale, and construction of a decontamination pad.

A large amount of miscellaneous debris would require removal from the site. An estimated 1,000 tons of scrap metal exists on site. Most of these items would be decontaminated by a high pressure steam system prior to removal from the site.

For the majority of the site, the clearing and grubbing of vegetation would be a simple task. However, significant vegetation exists on the slope and edge of the riverbank. Consideration must be given to erosion control during clearing and grubbing and during remediation.

Site preparation would be followed by hot spot excavation. Soils which exceeded the EP Toxicity limit of 5 mg/l for lead (approximately 50 CY) and soils containing PCBs in concentrations above 50 ppm (approximately 100 CY) would be treated (if

necessary) and disposed of at off-site Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act (TSCA) permitted facilities, respectively. All other hot spot soils, consisting of approximately 25 CY of petroleum hydrocarbon (TPH) contaminated soils and approximately 1,100 CY of soils with PCB concentrations between 10 and 50 ppm, would be disposed of at an off-site sanitary landfill or other facilities as required by applicable regulations.

Approximately 600 linear ft. of riverbank would be uniformly graded on a one to one slope. A filter layer would be installed and concrete placed over the bank and anchored into the bedrock. The site would then be backfilled and graded with a 1 foot soil cover, seeded and mulched. The hydraulic shear, hydraulic press and associated sumps would be cleaned by high pressure wash to 10 ug/100 cm^2 of PCBs and left in place.

It is estimated that this alternative would take 6 to 8 months to implement. Potential deed restriction or other institutional controls would be implemented to prevent disturbance of the cover or spreading contaminated soils. A formal groundwater monitoring program as outlined in Alternative A would be performed.

Alternative C: Hot Spot Excavation, Impervious Cover, Concrete Riverbank Protection and Equipment Decontamination

Costs:

Capital Costs:	$ 1,600,000
Operation & Maintenance: (Annual Cost)	$ 20,500
Present Worth, O&M:	$ 282,000
Total Capitalized Cost:	$ 1,900,000

This alternative includes hot spot excavation; placement of an impervious cap; placement of concrete riverbank protection; decontamination of the hydraulic press, hydraulic shear and related sumps/vaults; and groundwater monitoring.

The site would be prepared by removing debris, clearing and grubbing, and constructing a decontamination pad as described in Alternative B.

Site preparation would be followed by excavation of all hot spot soils as in Alternative B. All other excavated soils and debris (approximately 1,125 CY under this alternative) would be disposed of at an off-site sanitary landfill or other facilities as required by applicable regulations.

Due to the limited excavation under this alternative, concrete bank protection would still be most appropriate. Concrete would be used to protect approximately 600 linear ft. of riverbank that is not currently protected from erosion.

A bituminous concrete cover would then be constructed over the site. An 8-inch stone subbase would be placed over the existing soils. A bituminous concrete binder course 2.5 inches thick would be installed over the subbase. A bituminous concrete wearing course 1.5 inches thick would then be installed over the binder course. The bituminous concrete cover would be placed over an area of approximately 21,000 square yards (SY).

Due to the impervious nature of the cover, stormwater control would be addressed to ensure that stormwater runoff does not adversely affect the surrounding areas.

The entire site boundary would be fenced and institutional controls placed on the site as described in Alternative A. It is estimated that this alternative would require six to eight months to complete.

Potential deed restrictions or institutional controls would be placed on the use of the site to prohibit disturbance of the cover and the remaining contaminated soils, and a groundwater monitoring program as outlined in Alternative A would be implemented.

Alternative D - Hot Spot Excavation Plus Site-Wide Excavation to 1 foot, Concrete Riverbank Protection, and Equipment Decontamination

Costs:

Capital Costs:	$ 2,148,000
Operations & Maintenance: (Annual Cost)	$ 14,900
Present Worth, O&M:	$ 205,000
Total Capitalized Costs:	$ 2,353,000

This alternative includes hot spot excavation plus site-wide excavation of soils to a depth of 1 foot and backfilling with clean fill; placement of concrete riverbank protection; decontamination of the hydraulic press, hydraulic shear, and related sumps/vaults; and groundwater monitoring.

The site would be prepared by removing debris, clearing and grubbing, installing erosion and sedimentation controls, and constructing a decontamination pad as described in Alternative B.

The existing scale would be decontaminated, serviced, and certified for use during remedial activities.

Site preparation would be followed by excavation of all hot spot soils as in Alternatives Beand C. In addition, all soils above chemical-specific cleanup goals would be excavated to a depth of 1 foot (approximately 95% of the site area). The site would then be backfilled with 1 foot of clean fill.

The excavation of the site to a depth of 1 foot would result in approximately 7,460 cu yards of soil that would be disposed of at an off-site sanitary landfill. Verification sampling would be conducted to ensure complete removal of hot spot soils.

Due to the limited depth of excavation under this alternative, concrete riverbank protection as outlined in Alternatives Beand C would be appropriate.

Decontamination of the hydraulic shear, hydraulic press, and related sumps/vaults would be performed as described in Alternative B.

The entire site boundary would remain fenced with chain-link fence as described in Alternative A. It is estimated that this alternative could be completed within eight to ten months.

Potential deed restrictions and institutional controls would be placed on the use of the site to prohibit disturbance of the remaining contaminated soils. A formal groundwater monitoring program as outlined in Alternative A would be performed.

Alternative E - Hot Spot Excavation Plus Site-Wide Excavation to 6 Feet, Riprap Riverbank Protection, and Equipment Decontamination/Removal

Costs:

Capital Costs:	$ 5,299,000
Operations and Maintenance: (Annual Cost)	$ 15,100
Present Worth, O&M:	$ 208,000
Total Capitalized Costs:	$ 5,507,000

This alternative includes hot spot excavation plus site-wide excavation of soils to a depth of 6 feet (or to bedrock, whichever occurs first) and backfilling; placement of riprap riverbank protection; decontamination and removal of the hydraulic shear, hydraulic press, and related sumps/vaults; and groundwater monitoring. This alternative is similar to

Alternative D except the depth of excavation is to 6 feet as needed and riprap would be installed over the riverbank.

Site preparation would be followed by excavation of all hot spot soils as in Alternative D, except excavation would be to a maximum depth of 6 feet rather than 1 foot. This would generate more contaminated soil to be disposed off-site. Approximately 1,125 CY of soils with low levels of PCBs and TPHs, and approximately 29,185 CY of other contaminated soils would be disposed of at a sanitary landfill. The site would then be backfilled with clean fill.

For this alternative, riprap would be used to protect approximately 600 linear ft. of the riverbank from erosion. Due to the relatively extensive excavation included in this alternative, riprap river bank protection would be appropriate. Approximately 5400 cubic yards of soil would need to be removed and extensive clearing and grubbing would be necessary to meet the gentler slope requirements needed to install the riprap. These riverbank soils are expected to be contaminated and would be disposed of in a sanitary landfill. A filter fabric layer would be placed followed by approximately 18 inches of riprap. Actual depth and size of riprap would be determined during design of this alternative.

Decontamination of the hydraulic shear, hydraulic press, and related sumps/vaults would be performed as described in Alternative B, and the equipment would be removed from the site.

A groundwater program would be performed as described in Alternative A. It is expected that this alternative could be completed in 12 months of construction.

Alternative F - Excavation to Bedrock in Factory Street Portion, Hot Spot Excavation, Soil Consolidation, 1-Foot Cover on Middle of Site, Riprap Riverbank Protection, and Equipment Decontamination/Removal

Costs:

Capital Costs:	$ 1,847,000
Operation and Maintenance (Annual Cost)	$ 15,300
Present Worth, O&M:	$ 211,000
Total Capitalized Costs:	$ 2,058,000

This alternative includes excavation to bedrock and backfilling in the Factory Street portion of the site; hot spot excavation and off-site disposal; consolidation of nonhazardous soils;

installation of a 1-foot soil cover on the middle of the site (see Figure 6); riprap riverbank.

The site would be prepared as in Alternative B. The Factory Street portion of the site would then be excavated to bedrock (assumed to be 5 feet) and backfilled. Surface soils in the Factory Street portion of the site contain 1,000 to 5,000 ppm of lead based on sampling during the RI. Any soils meeting the definition of hazardous waste would be properly disposed of in a permitted facility while the remaining soils contaminated with heavy metals and low concentrations of PCBs would be consolidated into the remainder of the site. Based on volume estimates, the soil excavated for the Factory Street portion would be 5,100 cubic yards (CY), including 125 CY of hot spots for off-site disposal, and 4,975 CY of nonhazardous soils, which would be consolidated on site.

The middle of the site would undergo the same hot spot excavation as alternatives B and C. The nonhazardous soils from the Factory Street portion (4,975 CY) would then be placed, graded, and compacted in this area. Nonhazardous soils from the regrading of the riverbank would also be consolidated in this area, raising the area by less than 2 feet. One foot of soil cover would then be placed on this area, consisting of 6 inches of clean backfill and 6 inches of topsoil over an area of approximately 17,700 square yards (SY). This area would then be seeded and mulched.

This alternative also proposes the installation of riprap along the 600 linear ft. of riverbank to protect it from erosion as in Alternative E.

Decontamination of the hydraulic shear, hydraulic press, and related sumps/vaults would be performed as described in Alternative B, and the equipment would be removed from the site.

This alternative is designed to allow for unrestricted use of the smaller Factory Street portion of the site, while only allowing restricted use on the middle of the site. Deed restrictions or institutional controls would have to be placed to control/limit construction activities on the restricted area.

A groundwater monitoring program would be carried out as per Alternative A. It is estimated that this alternative would be completed in 12 months of construction.

Subsection 6.2: Evaluation of the Remedial Alternatives

The criteria used to compare the potential alternatives are defined in the regulation that directs the remediation of

inactive hazardous waste sites in New York State (6 NYCRR 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 criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied by the selected remedy.

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.**

The applicable SCGs for the Abe Cooper Site include; but are not limited to:

1. NYSDEC Class GA groundwater standards;
2. Toxic Substances Control Act, TSCA (40 CFR Part 761);
3. Resource Conservation and Recovery Act, RCRA (40 CFR Parts 261-268 and 6 NYCRR Parts 370-374);
4. Navigation and Navigable Waters - Nationwide Permits (33 CFR Part 330);
5. Clean Air Act (40 CFR Part 270) and 6 NYCRR Part 212);
6. 6 NYCC Part 502, Flood Plain Criteria
7. OSHA (29 CFR Parts 1900-1910)

Alternative A

Only the first two of the above SCGs apply to Alternative A since no remedial activities would take place which are related to other SCGs. Groundwater standards could eventually be met through natural attenuation. Further, groundwater contamination is not considered to be a significant issue at this site due to the limited nature of the overburden aquifer. This alternative would not comply with TSCA as hazardous waste would be left on site. Many of the remedial objectives would not be met.

Alternatives B through F would address all 7 SCGs listed above. Compliance with groundwater standards could be met through natural attenuation after a partial source removal, that is the excavation of the highly contaminated soils. These alternatives would all comply with TSCA and RCRA because of the proper, off-site disposal of soils from the "hot spots". The riverbank protection measures as proposed would comply with 33 CFR Part 330. Proper precautions during design and remediation would ensure compliance with the Clean Air Act, 6 NYCRR Part 212, Flood Plain Management Criteria, and OSHA worker safety regulations. The covers proposed by these alternatives would be consistent

with the Remedial Action Objectives for the Abe Cooper Site.

Alternative E would be most likely to result in compliance with groundwater standards in the shortest time period, as it specifies the removal of the majority of contaminated overburden.

2. **Protection of Human Health and the Environment**

This criterion is an overall evaluation of the health and environmental impacts, and to assesses whether each alternative is adequately protective.

Evaluation of the overall protectiveness of an alternative will focus on whether a specific alternative achieves adequate protection and will describe how site risk (posed through each pathway being addressed by the FS) are eliminated, reduced or controlled through treatment, engineering, or institutional controls.

Alternative A would provide inadequate protection of human health and the environment. Restrictive fencing around the site and around the contaminated equipment would protect nearby residents from direct contact with contaminated soils or equipment. However, Alternative A does nothing to limit exposure to PCB contamination in the air at the site, nor does it prevent the deposition of heavy metals and PCB contamination into the Black River that occurs by erosion of the contaminated riverbank soils.

Alternative B would more effectively prevent direct contact with highly contaminated soils and equipment. This alternative would remove highly-contaminated soils from the site, decontaminate the shear and press, and bury residual contamination beneath 1 foot of soil cover. This alternative would also effectively eliminate the sources and off site migration of contamination in the air. Erosion into the Black River would be effectively eliminated upon completion of the concrete revetment. Infiltration of water through the soil cover could theoretically carry residual contamination into the groundwater. However, the existing groundwater contamination is not considered significant at this site, and the remedy would remove some of the potential source of contamination.

Alternative C would attain the same protection as Alternative B. In addition, the impervious cover would eliminate any groundwater infiltration through the remaining contaminated soils. However, one negative aspect of Alternative C would be the large increase of stormwater runoff from the impervious, four acre cover.

Alternative D, would prevent exposure to contaminated soils and would prevent the erosion of contaminated soils into the Black

River. The possibility of health risks from dermal exposure, ingestion or inhalation would be greatly reduced. However, infiltration of water through the soil cover could theoretically carry residual contaminants into the groundwater. However, the existing groundwater contamination at the site is not considered significant at this site, and the remedy would remove some of the potential source of contamination.

Alternative E, would eliminate the potential environmental and human health risks by removing the contaminated soils to a depth of 6 feet. This alternative would achieve a much greater degree of protection than the other alternatives. In both "E" and "F" riprap would provide superior habitat medium than would the concrete revetment.

Alternative F would prevent exposure to contaminated soil for both humans and the environment. The possibility of human risks would be totally eliminated on the Factory Street portion of the site where soils would be excavated to bedrock and consolidated into the middle of the site and covered. The removal of the hot spots and covering the remaining residually contaminated soils with a one foot soil cover would provide similar levels of protection as alternatives B, C and D.

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 objectives is also estimated and compared with the other alternatives.**

Alternative A - No Action involves no excavation and would have no short-term impacts. Alternatives B through F would include excavation of highly contaminated soils which may create dust, mercury vapors, noise and track traffic. Dust and vapors can be controlled effectively. Work hours and truck routes could be scheduled to minimize traffic concerns. Mufflers would be used to minimize equipment noise. The proper use of monitoring, personal protective gear, and dust and vapor controls would mitigate risks.

Alternatives D, E and F (especially E) also include large amounts of soil excavation, which would magnify the above listed short-term effects due to the increased volume of soil to be handled.

Alternative E also specifies the off-site disposal of more than 34,000 cubic yards of contaminated soil in a sanitary landfill. This would reduce the useable capacity of the local landfill by a significant volume.

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. magnitude of the remaining risks,
   2. the adequacy of the controls intended to limit the risk, and
   3. the reliability of these controls.

Alternative A would neither contain nor remove the contaminants present on-site, and would not be effective over the long term. The risks to human health and the environment would remain the same as those quantified in the baseline risk assessment.

The remedial actions of Alternatives B, C and D would provide some degree of long term effectiveness by removing the hot spots for off-site disposal and decontaminating the hydraulic shear and press. However, the concrete riverbank protection and soil (or impervious) cover would be temporary in that it would require annual maintenance in order to continue to effectively stabilize the riverbanks and prevent environmental and human exposure to contaminated soils over the long term.

Alternative E offers the most permanently effective remedial action plan. A much larger mass of contaminated soils would be permanently removed from the site. The hydraulic equipment would be decontaminated and removed. Riprap of the riverbank would provide similar levels of effectiveness as the concrete used in alternatives B, C, and D, and would provide a better natural habitat.

Alternative F would offer higher levels of protectiveness than alternatives Beand D since the Factory Street area would be remediated for unrestricted reuse. Like alternatives B, C, and D, the hot spots would be removed and a cover installed over the residual contamination. Alternative F would use riprap and would provide a better habitat than concrete riverbank protection.

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

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, to reduce the total mass of contaminants, to attain irreversible reduction in mobility, or to achieve reduction of the total volume of contaminated media.

Alternative A, the no action alternative, would not result in any reduction of the present toxicity, mobility or volume.

Alternative B through Feall specify "hot spot" removal which would reduce the toxicity and volume of the highly contaminated soils on site. Alternative E would remove much more contaminated soils, in addition to the hot spots, than the other alternatives. These alternatives also specify decontamination of the hydraulic shear and press. The various covers and riverbank protection options used in these alternatives would reduce contaminant migration from the site. Alternative C and E would also reduce the potential for contaminant migration into the groundwater due to the use of a low permeability cover or removal of the source of contamination respectively.

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 material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternative A would be the easiest of the alternatives to implement. The technical implementability of Alternatives B through F is well demonstrated as these alternatives all use common construction methods. However, implementation of Alternative E would generate much larger quantities of materials that would require off-site disposal.

7. **Costs**

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

- **Estimation of capital and operation and maintenance costs; and**
- **Present worth analysis**

The cost estimates in the Feasibility Study were developed from published estimating sources (Means, 1994), quotes obtained from vendors, past project bidding results, and engineering judgement. Costs developed during the Feasibility Study are expected to provide an accuracy of +50% to -30%.

The major cost items of all six alternatives are compared in Tables 2 and 3. The large differences in capital costs are primarily due to the proposed amounts of contaminated soils that would be disposed of off-site.

Based on costs, Alternatives B, C, D, and F provide similar levels of protection as Alternative E at approximately 30-35% of the coste Alternative F is 10-33% more costly than alternatives C&B respectively, but allows for less restricted reuse of a portion of the site.

8. Community Acceptance

Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan are evaluated under this criteria.

A citizen participation program was carried out as part of the remedy selection processe A Proposed Remedial Action Plan for the site, which summarized the findings of the RI/FS and outlined the State's proposed remedy, was issued for public review. A 30 day public comment period was provided on the plan. A public meeting was held on August 17, 1994 at the Dulles State Office Building, Watertown, NY, DEC Conference Room, fifth floor. The public comment period ran from August 3, 1994 to September 2, 1994.

The Department reviewed comments received at the public meeting and during the comment period, and factored them into the remedy selection process. A Responsiveness Summary to the comments and a Record of Decision outlining the selected remedy are being issued in this document.

The Department has considered land use planning projects and reuse of the site in selecting the remedye The selected remedy is compatible with land use plans for the area.

SECTION 7: SUMMARY OF THE GOVERNMENT DECISION FOR THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in this section, the NYSDEC selected the following remedy for the site:

Modification of Alternative F: In place of the excavation to bedrock delineated by Alternative F, the modification of Alternative F will excavate surface and sub-surface soils containing more than 500 ppm of lead in the Factory Street portion of the site, backfilling with clean fill; and covering any unexcavated soils with 1 foot of clean soil. The goal to restore the Factory Street Site to unrestricted reuse remains the same. However, the extent of excavation is to be guided by contaminant lead level versus assuming that excavation must go to bedrock. Confirmatory samples will be taken during construction to determine the levels of arsenic, beryllium and mercury left in the unexcavated soil.

The modified alternative is identical to Alternative F in that it proposes hot spot excavation and disposal off-site; soil consolidation in the middle of the site with a 1 foot deep soil cover; riprap riverbank protection; and equipment decontamination and removal from the site.

Subsection 7.1: **Rationale for Selection of the Proposed Remedial Alternative**

Alternative A did not meet either of the (2) threshold criteria, and therefore was eliminated from consideration.

Alternative E specifies the excavation and off-site disposal of all contaminated overburden material within 6 feet of the surface.

This alternative is the most protective and permanent of the remedies, however, it is by far the most costly to construct ($5,299,000). Alternative E requires disposal of 34,000 cubic yards of contaminated overburden materials in a sanitary landfill which represents approximately 1/4 of the volume of solid waste that is locally landfilled each year.

Alternatives B, C, D and F are all protective and range in capital costs between $1,372,000 to $2,148,000. Alternatives B through D would remove all hazardous wastes and soils containing 10 ppm or more of PCBs from the site, and would then cover the residually contaminated soils site wide. This would result in restrictions and controls on a site wide basis to prevent the potential exposure to or the spreading of the covered contaminants. The modification of Alternative F would provide the same removal of hazardous wastes and other hot spot soils as these other alternatives, but would also more fully remediate the Factory Street portion of the site. This would make the site more saleable and would more likely restore the site to productive reuse and return it to the City's tax base. This alternative would thus, be more compatible with land use plans for the area.

Alternative Fealso specifies a more favorable remedy to protect the Black River by removing the mass of debris and contamination from the top of the bank and cutting back the slope to a more stable, natural angle and lining the bank with riprap. This provides a better natural habitat than the other alternatives.

Although the Alternative F costs 10 to 36% more than Alternatives B or C, Alternative F is preferred because but it will be more likely to restore the site to productive reuse after remediation, and because the riprap riverbank protection will provide better natural habitat than concrete. Using riprap protection in these other alternatives would further reduce the cost differential. For all the above reasons, the State has selected a modified version of Alternative F as the remedy for the site.

The modification of Alternative F differs from the original alternative only by the substitution of a sub-surface cleanup level in place of the arbitrary excavation of all overburden materials along Factory Street. Due to high levels of lead contamination already measured in this area, the two remedies are likely to have the same effect and the same capital cost.

Subsection 7.2: Cost of the Selected Remedy

The maximum total capital cost to implement the Modification of Alternative F is estimated as $1,847,000. The State has received $100,000 from the estate of Abe Cooper and will receive the net proceeds from the sale of the property after it is remediated.

Subsection 7.3: Elements of the Selected Remedy

The elements of the selected remedy for remediation of the Abe Cooper Surplus Company Site, Modification of Alternative F, are as follows:

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

2. The site will be prepared by removing debris, clearing and grubbing, installing erosion and sediment controls. The existing scale will be decontaminated, serviced and certified for use during remedial alternatives.

3. Site preparation will be followed by excavation of all hot spot soils, including all soils meeting the definition of hazardous wastes, those soils contaminated with PCB

concentrations of 10 ppm or greater and all soils in the trench area contaminated with petroleum hydrocarbons. These soils will be properly treated and/or disposed of at an approved off-site landfill.

4. In the remainder of the remedial work, the site will be conceptualized as two separate remedial areas: the Factory Street portion of the site and the middle (northern portion) of the site. The soils containing more than 500 ppm of lead in the Factory Street portion will be excavated and the area backfilled. Confirmatory samples will be taken during construction to determine the levels of other contaminants of concern (arsenic, beryllium, and mercury) left in the unexcavated soils. Any unexcavated soils will be covered with at least one foot of clean fill and seeded.

5. The central portion of the site will receive non-hazardous overburden from the Factory Street portion and from the riverbank area. This central area will then be graded, compacted, and covered with 6 inches of clean backfill, 6 inches of topsoil, then seeded and mulched.

6. The slope of the riverbank will be regraded to a more gentle slope. Eighteen inches of riprap will be installed, underlain by a layer of filter fabric.

7. Decontamination of the hydraulic shear, hydraulic press and related sumps and vaults will be accomplished by high pressure water washing and steam cleaning. The equipment will then be removed from the site.

8. Deed restrictions or other institutional controls will be implemented to limit construction activities on the restricted use portion of the site (central portion). The Factory Street portion of the site may not require any restrictions on reuse except those required by local ordinances.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

The NYSDEC relies on public input to ensure that the remedies selected for this site meet the needs and concerns of the community and that the remedies are an effective solution to the problem.

As part of the RI/FS, a Citizen Participation Plan was prepared in September 1991. The principal objectives of the Citizen Participation Plan were:

1. To provide area residents with an understanding of the New York State Superfund process. Such an understanding promotes realistic public expectations about the activities, complexities and time involved with site investigation.

2. To provide accurate, understandable information concerning the RI/FS program to interested citizens. NYSDEC provided information through project updates and public meetings.

3. To provide the community with information needed to express their views and to discuss issues of concern with NYSDEC during the RI/FS process. Documents and data were made available for public review. Citizens and town officials were asked to express their views and discuss issues of concern with NYSDEC.

4. To establish a good relationship with the local media so that accurate information about RI/FS activities would be reported.

The following public participation activities were carried out:

1. Document repositories were established at the Flower Memorial Library, the Watertown City Clerk's Office and the NYSDEC Region 6 Headquarters. Pertinent reports and documents related to the RI/FS were placed there during the project.

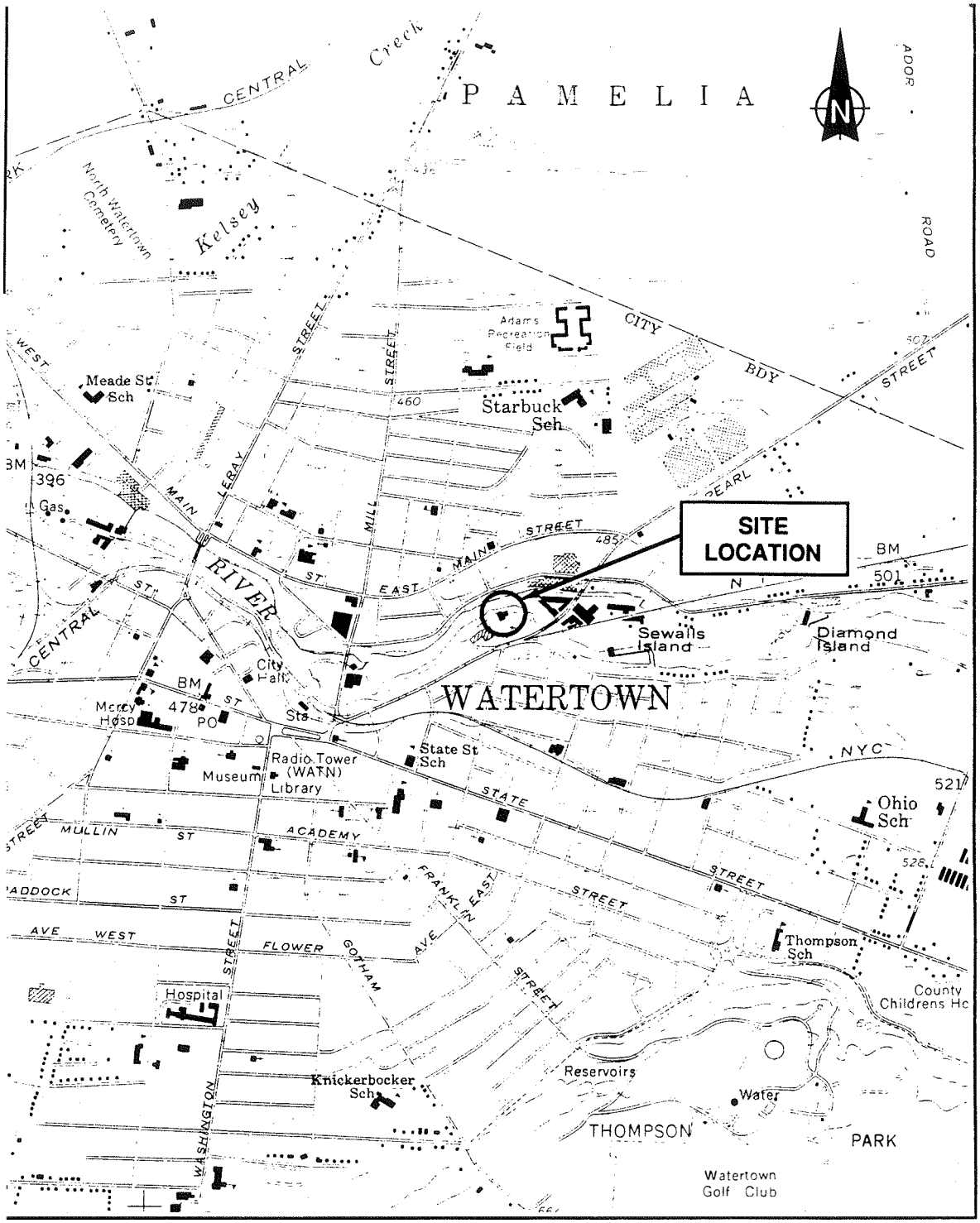
2. Two public meetings were held at the Dulles State Office Building in Watertown. The first meeting was an information session to discuss the anticipated field work for the Remedial Investigation. The second public meeting was held on August 17, 1994. Its purpose was to solicit public comment on NYSDEC's proposed remedial alternative.

3. A Proposed Remedial Action Plan was issued on August 3, 1994. A 30 day public comment period was provided.

4. Questions and answers recorded during the August 17, 1994 public meeting and during the 30 day public comment period (August 3, 1994 to September 2, 1994) were used to develop the Responsiveness Summary, presented in Appendix B of this document.

Based on the information received during this process, there has been no significant change in the selected remedy for this site relative to the proposed remedy presented at the August 17, 1994 public meeting.

FIGURES



SOURCE: USGS 7.5 Minute Series (Topographic) Quadrangle: Watertown, NY, 1959.

SCALE 1:24,000

0 ½ 1 Mile

0 .5 1 Kilometer

Figure 1
SITE LOCATION MAP, ABE COOPER SURPLUS COMPANY

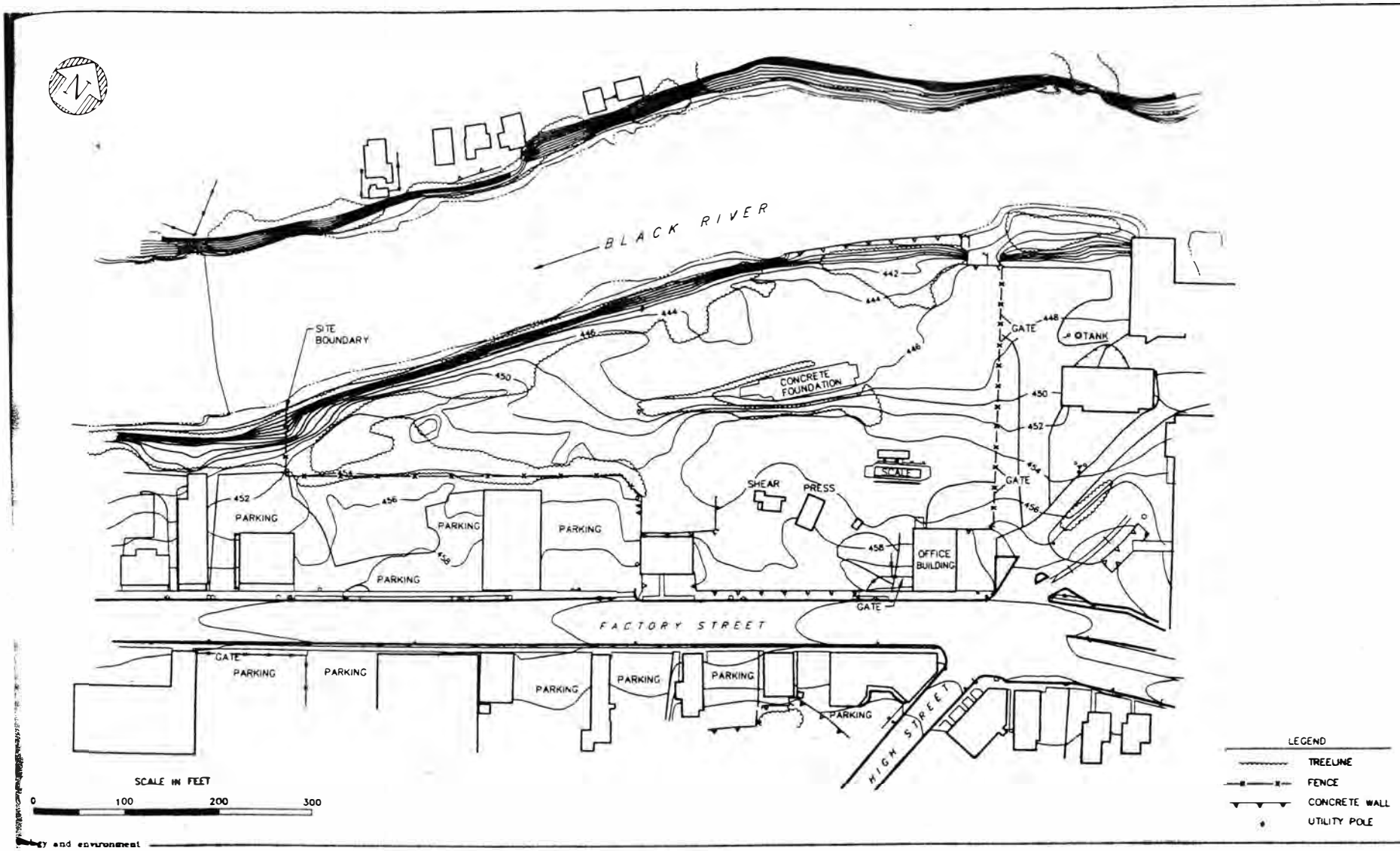


Figure 2 ABE COOPER SURPLUS COMPANY
EXISTING SITE PLAN

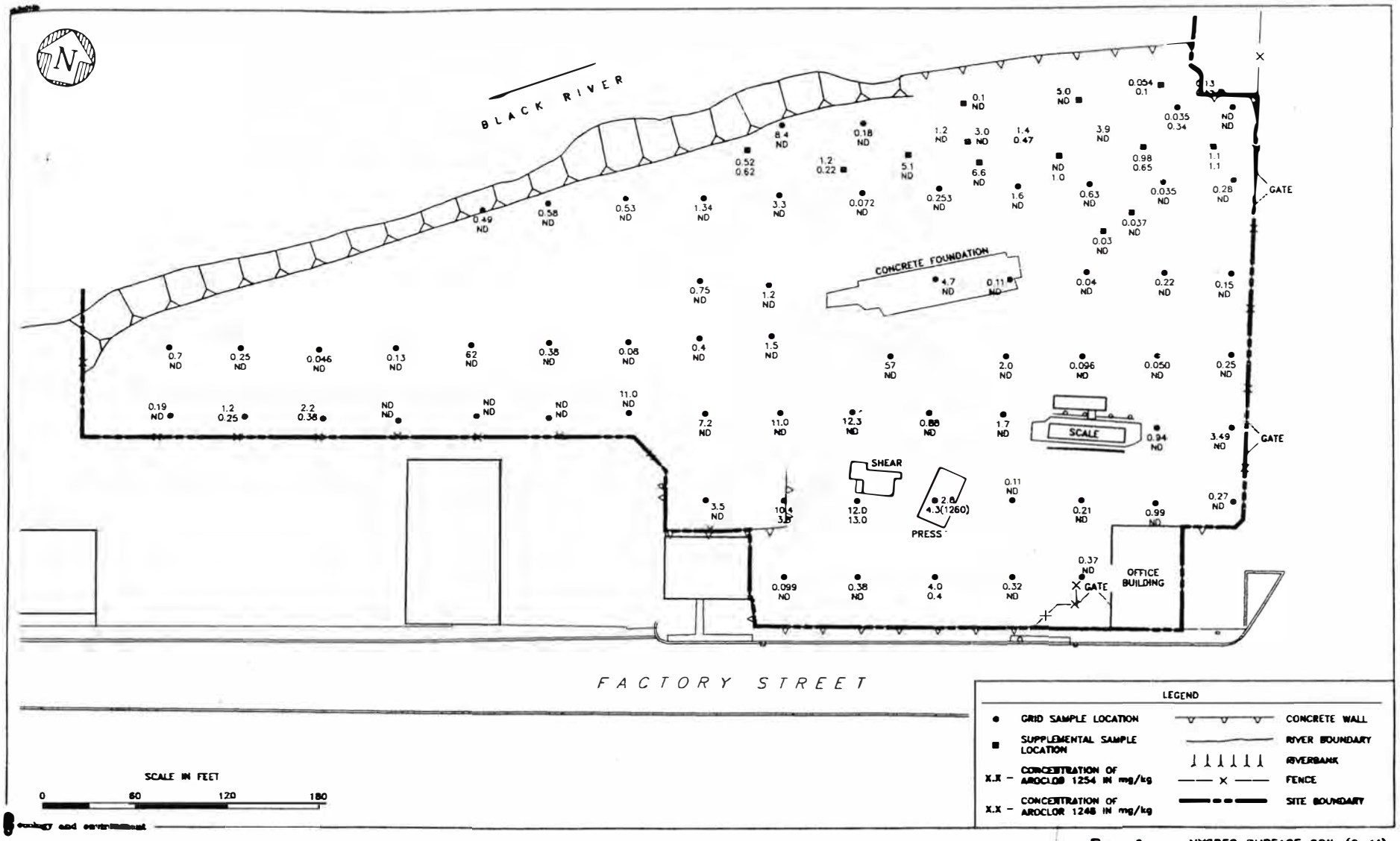


Figure 3 NYSDEC SURFACE SOIL (0-1') PCB CONCENTRATIONS ABE COOPER SURPLUS COMPANY

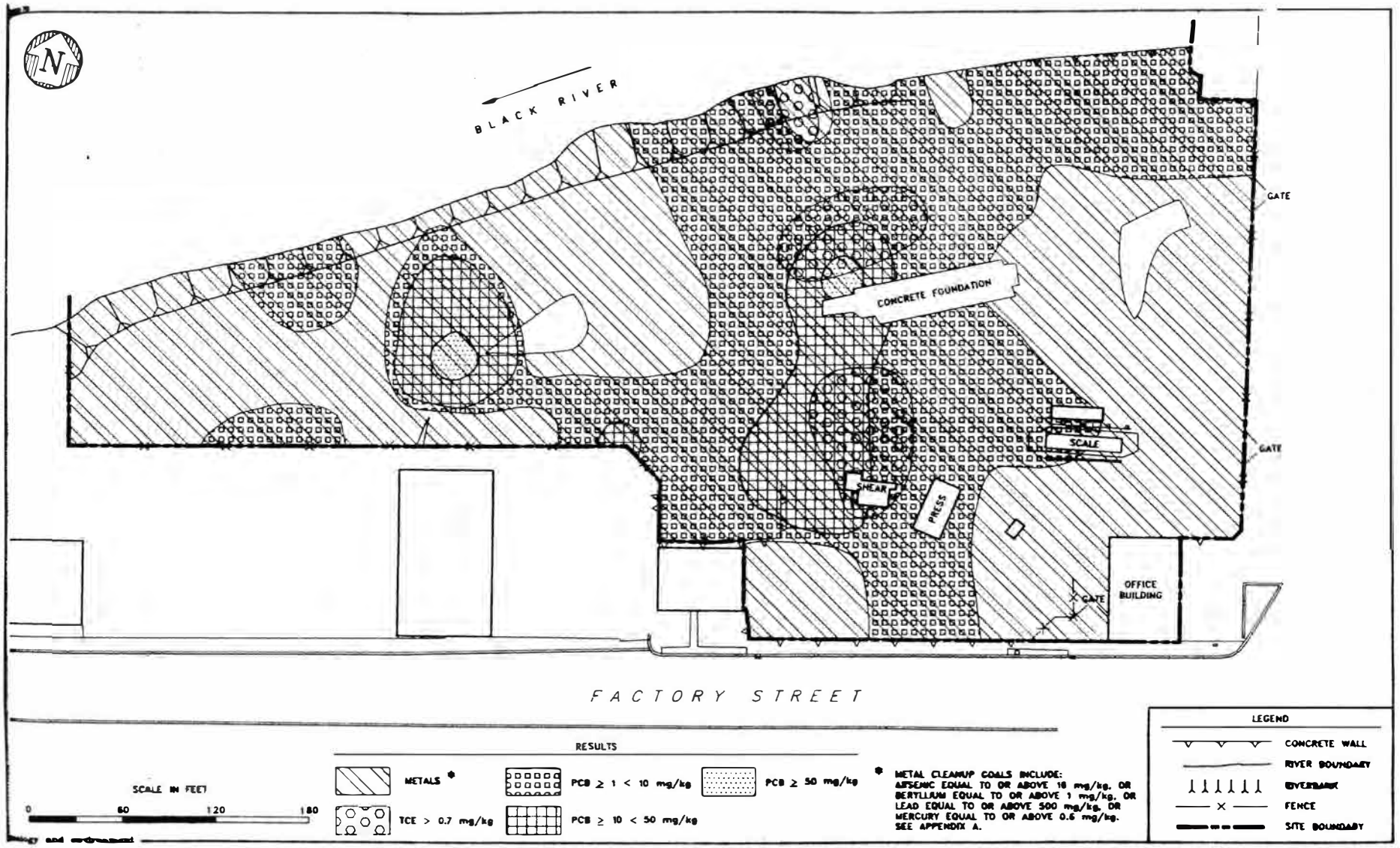
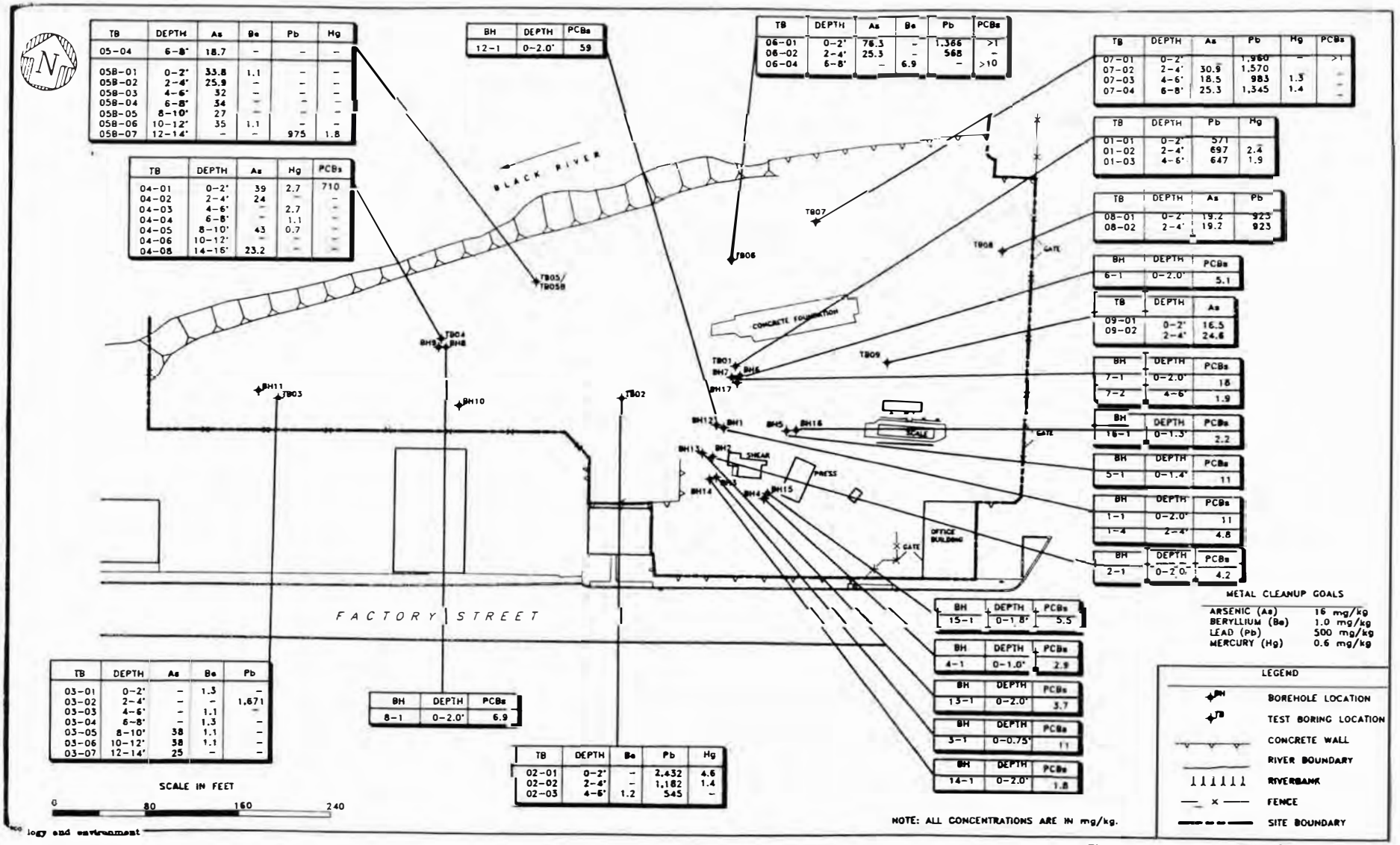


Figure 4 NYSDEC SOIL (0-1') CONTAMINANTS ABE COOPER SURPLUS COMPANY



TB	DEPTH	As	Be	Pb	Hg
05-04	6-8'	18.7	–	–	–
05B-01	0-2'	33.8	1.1	–	–
05B-02	2-4'	25.9	–	–	–
05B-03	4-6'	32	–	–	–
05B-04	6-8'	34	–	–	–
05B-05	8-10'	27	–	–	–
05B-06	10-12'	35	1.1	–	–
05B-07	12-14'	–	–	975	1.8

TB	DEPTH	As	Hg	PCBs
04-01	0-2'	39	2.7	710
04-02	2-4'	24	–	–
04-03	4-6'	–	2.7	–
04-04	6-8'	–	1.1	–
04-05	8-10'	43	0.7	–
04-06	10-12'	–	–	–
04-08	14-16'	23.2	–	–

BH	DEPTH	PCBs
12-1	0-2.0'	59

TB	DEPTH	As	Be	Pb	PCBs
06-01	0-2'	76.3	–	1,366	>1
06-02	2-4'	25.3	–	568	–
06-04	6-8'	–	6.9	–	>10

TB	DEPTH	As	Pb	Hg	PCBs
07-01	0-2'	–	1,960	–	>1
07-02	2-4'	30.9	1,570	–	–
07-03	4-6'	18.5	983	1.3	–
07-04	6-8'	25.3	1,345	1.4	–

TB	DEPTH	Pb	Hg
01-01	0-2'	571	–
01-02	2-4'	697	2.4
01-03	4-6'	647	1.9

TB	DEPTH	As	Pb
08-01	0-2'	19.2	923
08-02	2-4'	19.2	923

BH	DEPTH	PCBs
6-1	0-2.0'	5.1

TB	DEPTH	As
09-01	0-2'	16.5
09-02	2-4'	24.8

BH	DEPTH	PCBs
7-1	0-2.0'	18
7-2	4-6'	1.9

BH	DEPTH	PCBs
16-1	0-1.3'	2.2

BH	DEPTH	PCBs
5-1	0-1.4'	11

BH	DEPTH	PCBs
1-1	0-2.0'	11
1-4	2-4'	4.8

BH	DEPTH	PCBs
2-1	0-2.0'	4.2

BH	DEPTH	PCBs
15-1	0-1.8'	5.5

BH	DEPTH	PCBs
4-1	0-1.0'	2.9

BH	DEPTH	PCBs
13-1	0-2.0'	3.7

BH	DEPTH	PCBs
3-1	0-0.75'	11

BH	DEPTH	PCBs
14-1	0-2.0'	1.8

TB	DEPTH	As	Be	Pb
03-01	0-2'	–	1.3	–
03-02	2-4'	–	–	1,671
03-03	4-6'	–	1.1	–
03-04	6-8'	–	1.3	–
03-05	8-10'	38	1.1	–
03-06	10-12'	38	1.1	–
03-07	12-14'	25	–	–

BH	DEPTH	PCBs
8-1	0-2.0'	6.9

TB	DEPTH	As	Pb	Hg
02-01	0-2'	–	2,632	4.6
02-02	2-4'	–	1,182	1.4
02-03	4-6'	1.2	545	–

METAL CLEANUP GOALS

ARSENIC (As)	16 mg/kg
BERYLLIUM (Be)	1.0 mg/kg
LEAD (Pb)	500 mg/kg
MERCURY (Hg)	0.6 mg/kg

Figure 5 SUBSURFACE SOIL CONCENTRATIONS ABOVE CLEANUP GOALS ABE COOPER SURPLUS COMPANY

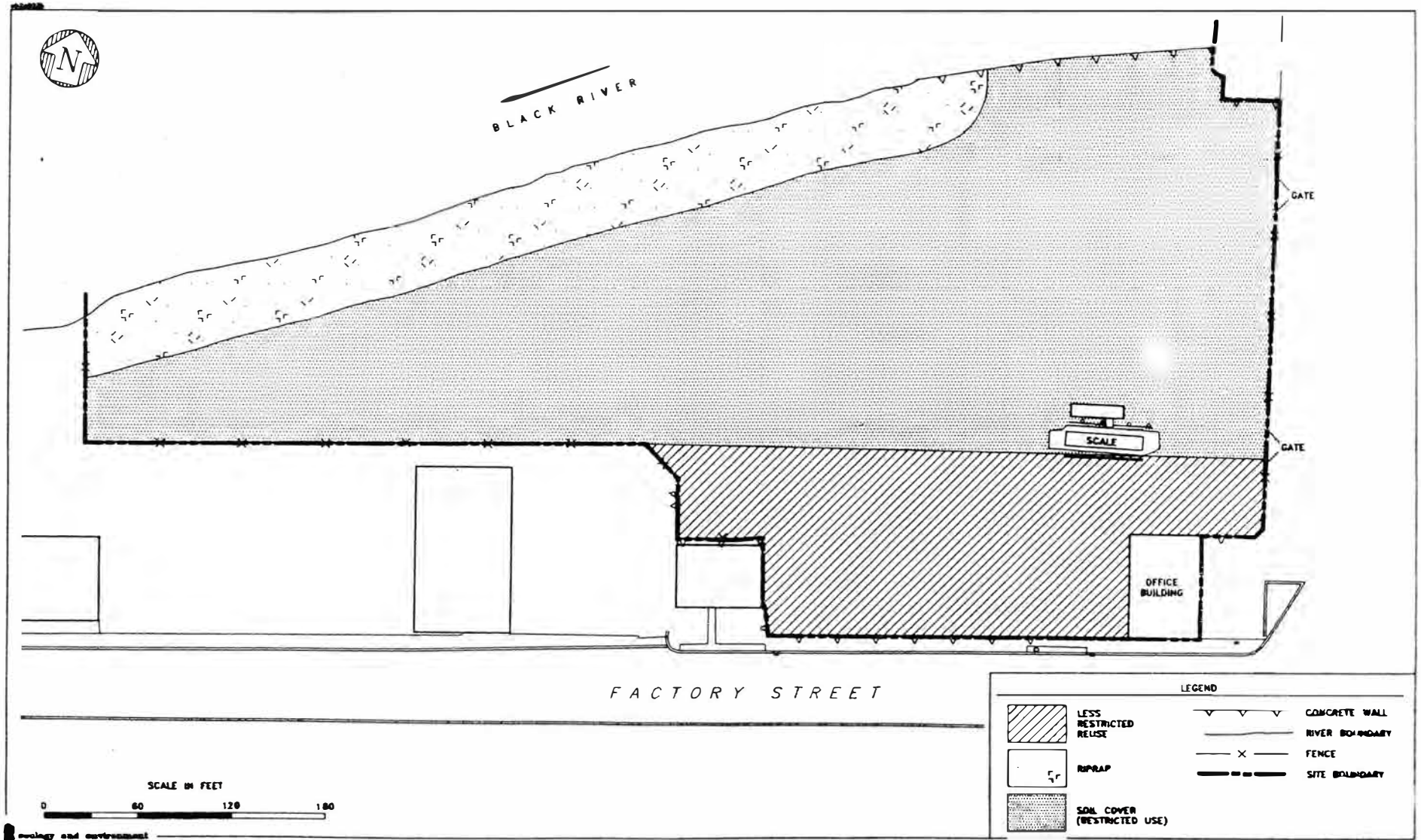
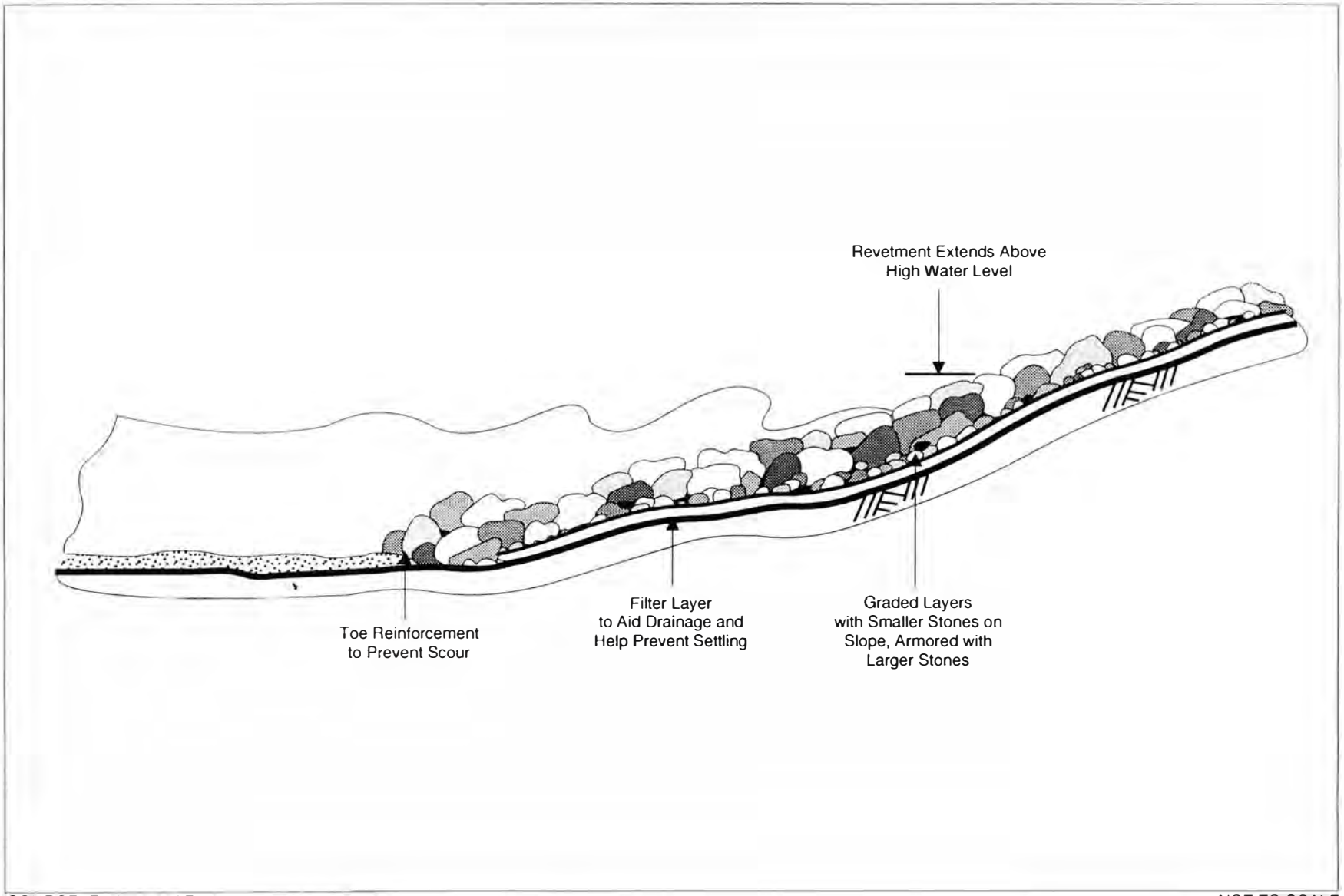


Figure 6 Modification of Alternative F
ABE COOPER SURPLUS COMPANY

02: OB2080.CDR



SOURCE: Ecology and Environment, Inc. 1994

NOT TO SCALE

Figure 7 TYPICAL RIPRAP REVETMENT CROSS SECTION

TABLES

TABLE NO. 1

SUMMARY OF CONTAMINANTS DETECTED IN
GROUNDWATER FROM MONITORING WELLS

		Range of Detected Concentrations (ug/L)					
Chemical	Detection Frequency[2]	Minimum	Maximum	NYSDOH MCL[3] (ug/L)	Exceedance Frequency	NYSDEC Class Groundwater Standard[4] (ug/L)	Exceedance Frequency
Trichloroethene[5]	2/6	10	14	5 P	2/6	5	2/6
PCBs							
Aroclor 1254[6]	2/6	0.04	0.94	5 P	0/6	0.1	1/6
Cyanide	2/5	180	545	NA	NA	100	2/5

Table 2

SUMMARY OF ALTERNATIVE COST ESTIMATES
ABE COOPER SURPLUS SITE

Alternative	Capital Costs										
	Mobilization/ Demobilization	Site Services	Health and Safety	Soil Excavation and Disposal	Backfilling	Cover Installation	Riverbank Remediation	Shear and Press Decontamination	Other Direct Capital Costs[a]	Indirect Capital Costs[b]	Total Capital Costs[c]
A	$2,500	NA	$12,500	NA	NA	NA	NA	NA	$5,000	$4,000	$24,000
B	$30,000	$264,000	$175,000	$145,496[g]	18,488	155,750	$151,354	$18,000	$139,000	$275,000	$1,372,000
C	$45,000	$264,000	$175,000	$145,496[g]	18,488	336,630	$151,354	$18,000	$139,000	$323,000	$1,616,000
D	$80,000	$330,000	$225,000	$604,340[h]	213,170	NA	$151,354	$18,000	$139,000	$387,000	$2,148,000
E	$200,000	$396,000	$250,000	$2,259,366[i]	546,670	NA	$578,560	$44,800[j]	$139,000	$884,000	$5,299,000
F	$90,000	$396,000	$250,000	$153,108[k]	122,214	123,413	$195,700	$44,800[j]	$139,000	$333,000	$1,847,000

Table 3

SUMMARY OF ALTERNATIVE COST ESTIMATES
ABE COOPER SURPLUS SITE

Alternative	Operation and Maintenance Costs						Alternative Total Cost
	Groundwater Monitoring	Maintenance[d]	Property Tax Loss	Indirect O&M Costs[e]	Total Annual O&M Costs[f]	Total O&M Present Worth	
A	$10,500	$750	$1,250	$1,250	$13,800	$190,000	$214,000
B	$10,500	$1,500	$625	$2,273	$14,900	$205,000	$1,577,000
C	$10,500	$6,250	$625	$3,128	$20,500	$282,000	$1,898,000
D	$10,500	$1,500	$625	$2,300	$14,900	$205,000	$2,353,000
E	$10,500	$1,950	$310	$2,300	$15,100	$208,000	$5,507,000
F	$10,500	$1,925	$500	$2,327	$15,300	$211,000	$2,058,000

[a] Includes other site preparation costs (i.e., clearing, debris removal, and salvage), verification sampling, and monitoring well installation. These costs were grouped under one heading because they are the same for all alternatives.

[b] Includes legal, administrative, engineering fees, and contingencies.

[c] Total capital costs are rounded to the nearest thousand.

[d] Includes maintenance of the fence, site cover, and slope protection as appropriate.

[e] Includes legal, administrative, engineering fees, and contingencies.

[f] Total annual O&M costs are rounded to the nearest hundred.

[g] Includes only hot spot excavation and disposal.

[h] Includes hot spot excavation and site-wide excavation to 1 foot BGS.

[i] Includes hot spot excavation and site-wide excavation to 6 feet BGS.

[j] Includes dismantling/removal and salvage value.

[k] Includes excavation to bedrock (5 feet BGS) in Factory Street portion of site and hot spot excavation in remainder of site.

APPENDIX A

ADMINISTRATIVE RECORD INDEX

Appendix A
Administrative Record Index

Abe Cooper Surplus Company Site
Site No.: 6-23-006

City of Watertown
Jefferson County, New York

The following documents are included in the Administrative Record:

1. Drum Inventory and Preliminary Disposal Plan, Abe Cooper - Watertown, Calocerinos & Spina, Consulting Engineers, July 26, 1989.

2. Final Report, Watertown Surplus Site, Drum Removal Project, Allwash of Syracuse, Inc., January 18, 1990.

3. Citizen Participation Plan for the Abe Cooper Site, NYSDEC, September, 1991.

4. Work Plan for Phase I, Remedial Investigation/Feasibility Study, Abe Cooper Surplus Company, Ecology and Environment, Inc., September, 1991.

5. Remedial Investigation/Feasibility Study Health and Safety Plan, Abe Cooper, Ecology and Environment, September, 1991.

6. Work Plan for Remedial Investigation/Feasibility, Abe Cooper, Ecology and Environment, February, 1992.

7. Quality Assurance Project Plan, Phase 1 RI/FS, Abe Cooper, Ecology and Environment, march, 1992.

8. Human Health Risk Assessment for Abe Cooper Surplus Company, Ecology & Environment, February, 1993.

9. Remedial Investigation Report, Abe Cooper, Ecology & Environment, April, 1994.

10. Feasibility Study Report, Abe Cooper, Ecology & Environment, September, 1994.

APPENDIX B

RESPONSIVENESS SUMMARY

Appendix B

Abe Cooper Surplus Company Site (#6-23-006)

City of Watertown
Jefferson County, New York

Responsiveness Summary

This Responsiveness Summary was prepared in order to respond to the public's comments about the New York State Department of Environmental Conservation's (NYSDEC's) Proposed Remedial Action Plan (PRAP) to remediate contaminated surface and subsurface soils at the Abe Cooper Surplus Company Site.

NYSDEC invited the public to comment about the proposal through a mailing to the site's contact list and at a public meeting held on August 17, 1994. This Responsiveness Summary addresses public comments received at that meeting and during the public comment period which ran from August 3, 1994 until September 2, 1994.

* * * * * * *

Questions and Answers from the Public Meeting

1. Q. It is well known in Watertown that Abe Cooper had many financial assets. It is distressing to hear that the State Superfund monies are being used to fund the site remediation. Why is the Estate of Abe Cooper paying only $100,000 toward the estimated $1.85 million of construction costs of remediation?

A. In 1988, Abe Cooper Watertown Corporation did agree to remediate the Site. The Corporation conducted site investigations and interim remedial measures including the removal of more than 11,000 gallons of liquid hazardous waste and 8 drums of PCB contaminated materials from the site. In early 1990, after expending approximately $1 million, the Corporation notified the State that it did not have sufficient funds to complete the remediation.

In 1992, the Attorney General's Office completed a financial review of the Corporation's assets and liabilities and successfully negotiated a Consent Decree with the Corporation. Abe Cooper agreed to make a final payment of $100,000 to the State, and to transfer the net proceeds from the sale of the site (when the remediation is complete) to the State to defray cleanup costs.

At present, the NYSDEC is exploring the possibility of additional cost recovery from other Potentially Responsible Parties (PRPs). Other PRPs for the Abe Cooper Site would be those businesses that disposed of materials containing hazardous chemicals at the site.

2. Q. Can the State force Abe Cooper to sell the property, and set a minimum price? How much is the property worth?

A. The 1992 Consent Decree specifically requires the Corporation to list the site for sale within 30 days of notification of completed remediation. The Decree also states that the Corporation shall use its best efforts to obtain a buyer for the site at fair market value. Present estimates of the market value of the property after remediation have indicated a range of $70,000-80,000. However, actual market value can only be determined when the property is listed for sale.

3. Q. How can local contractors get work in cleaning up the site?

A. Local contractors with appropriate experience may bid on the remediation contract; however, there is no requirement that local contractors (or subcontractors) must be used. The contractor selected to perform the clean up of the site will be the contractor that submits the lowest responsive bid. A contractor may want to subcontract with local businesses in order to establish a more competitive bid.

4. Q. What are the special procedures required for removal of scrap from a hazardous waste site?

A. With the exception of the workers confined to designated clean areas, all personnel working on the site must meet OSHA requirements for working with hazardous wastes (29 CFR 1910.120). This consists of completion of the OSHA health and safety training and annual updates of medical exams and records.

In addition, all vehicles, scrap and personnel that have entered the contaminated areas of the site will require decontamination before leaving the site. A designated clean area may be established on-site where hazardous waste site procedures would not be required. During remediation of the site, all contractors will be required to take whatever steps necessary to protect site workers and to prevent any additional risk from occurring in the site vicinity.

5. Q. When will this project be bid? Will there be a public notice of the bid?

A. The scheduling goal for the Abe Cooper Site is to start remedial design during the fall of 1994, and to complete the design by April 1995. If this timetable is met, the project will be bid during the summer of 1995, and construction could begin during the fall of 1995.

To advertise for bids, a public notice will be placed in the Dodge Report and the local newspaper.

6. Q. Will construction proceed during the winter?

A. No; however, our goal would be to complete scrap removal during the fall of 1995, before the weather makes site operations too difficult to continue.

7. Q. Will the contaminated soils and wastes go to area landfills?

A. All hazardous wastes (soils containing more than 50 parts per million (ppm) of PCBs and soils that exhibit hazardous characteristics, such as excessive leaching of lead, will be removed from the site for treatment and disposal in a licensed hazardous waste facility. Contaminated soils containing less than 50 ppm of PCBs may be disposed of in those sanitary landfills that are willing to accept such wastes, and that are approved by DEC. Soils with a low level of contamination will be consolidated the central area of the site and covered with one foot of clean soil.

It is estimated that 150 cubic yards of hazardous waste will require removal from the site and disposal at a licensed hazardous waste facility. It is estimated that another 1,125 cubic yards of non-hazardous material at the site may be disposed of in sanitary landfills.

8. Q. Do contaminants from the site pose any health risks to people using the Black River for recreation, particularly kayaking and white water rafting?

A. The PCBs and metals contamination from the site does not significantly impact the Black River. In addition, the selected remedy will minimize any impact on the Black River by removing contaminated soils along the river bank and by installing rip rap to control erosion of soils from the site into the river.

The PCBs recently identified in the Black River have been traced to sources upstream of the Abe Cooper site. One individual in attendance at the public meeting, whose father was a former employee of the Abe Cooper Surplus Company, stated that his father told him that the electric transformers received on-site were routinely drained near the river's edge.

Potential health risks at the site may be related to direct contact with contaminated soils or inhalation exposure of people working or living on the site if it was left unremediated. Specific questions on the potential health concerns associated with the site can be discussed with the New York State Department of Health, by calling Henri Hamel or Ron Heerkens at 315-426-7613.

9. Q. Will the water level be lowered during construction, and can that be done in cooperation with the rafting companies that run tours on the Black River during May through October?

A. It may not be necessary to lower the river level to install the rip rap. However, if controlling the river level is determined to be necessary, it will be coordinated with the Hudson River - Black River Regulating District and any private parties having jurisdiction over the dams.