DECLARATION STATEMENT - RECORD OF DECISION

ANITEC IMAGE CORPORATION SITE

Operable Unit #1 - Building 8, Powerhouse
Operable Unit #3 - Buildings 95 & 96
Operable Unit #4 - Building 32 & Elm/Halford St. Parking Lot
Operable Unit #5 - Site Groundwater

City of Binghamton, Broome County, New York
Site No. 7-04-022
March 1996

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for Operable Units 1, 3, 4 & 5 of the Anitec Image Corporation 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 Anitec Image Corporation 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 B 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 Anitec Image Corporation site and the criteria identified for evaluation of alternatives the NYSDEC has selected the following remedies for the four operable units addressed by this ROD:

- Operable Unit 1(OU1), Building 8, Powerhouse, based upon the results of the RI/FS, two Interim Remedial Measures (IRMs) for OU1 are currently underway to address PCB contamination inside a transformer room and in an associated drywell.

  These ongoing IRMs will address the only identified contamination associated with this operable unit. Therefore, since an evaluation of possible remedial alternatives was not necessary, No Further Action, pending the satisfactory completion of the IRMs is the selected remedial alternative for OU1.

- Operable Unit 3 (OU3), Buildings 95 and 96, the selected remedy for this operable unit is Soil Stabilization and Capping Buildings 95 and 96, to address elevated levels of cadmium and silver in site soils.

  The components of this remedy are as follows:

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

  2. Solidification of Building 95 soils. This process will be performed in-situ at this location. An estimated 3,700 cubic yards of soil will be remediated at the Bldg 95 area. All of the soil that is characteristic hazardous waste will be rendered nonhazardous by a solidification process. Soils that are non hazardous but exceed the soil SCGs, 10 ppm at the surface and 50 ppm in the subsurface, for the inorganic compounds of concern, will also be solidified as part of this remedy.

  3. Solidification of Building 96 soils. This process will be performed ex-situ at this location. All of the soil that is characteristic hazardous waste will be excavated and rendered nonhazardous by a solidification process. Soils that are nonhazardous but exceed SCGS for the inorganic compounds of concern will also be solidified. An estimated 125 cubic yards of contaminated soil will be remediated in the Bldg 96 area. The treated wastes will be placed back into the excavated areas.

  4. After treatment of the soils both the Bldg 95 and 96 areas will be graded and capped with asphalt. The asphalt cap will be of the proper thickness and porosity to minimize leaching (See Figures 3 & 4 for areas to be remediated).

  5. Confirmatory sampling will be performed to verify the effectiveness of the solidification process in both areas of remediation.

  6. Groundwater will be monitored to determine the effectiveness of this remediation as addressed in Operable Unit 5.

- Operable Unit 4 (OU4), Building 32 and Elm/Halford St. Parking Lot (EHPK), No Action has been selected for this operable unit. Since the low level volatile and semi-volatile organic compounds in site subsurface soil pose no significant threat to public health or the environment and there would be no measurable benefit achieved by implementing any of the other alternatives considered, the No Action alternative, has been selected for OU4.

- Operable Unit 5 (OU5), Site Groundwater, the selected remedy for this operable unit is Hydraulic Control to address volatile organic compound contamination of the aquifer under the plant site.

The components of this remedy are as follows:

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

2. The withdrawal of low levels of contaminated groundwater from all areas of known contamination identified on the plant site (See Figure 7). The discharge will be monitored by sampling performed on the SPDES outfalls.

3. Semiannual monitoring of various monitoring wells to determine effectiveness of the withdrawal system.

4. Semiannual reporting of the volume of water pumped from each production well, and the total volume pumped.

5. The overall effectiveness of the entire system will be evaluated on a five year basis.

6. If plant operational changes require a 25% or greater reduction in pumping demands, prior notification will be required and the selected remedial alternative will be re-evaluated to determine its effectiveness. If this alternative is then determined to no longer be effective at the new pumping rates, based on information from current measurements of groundwater quality and contours, another remedial alternative may be selected.

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.

_____
Date

_____
Michael J. O'Toole Jr., Director
Division of Hazardous Waste Remediation

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SECTION 1: SITE LOCATION AND DESCRIPTION

The Anitec Image Corporation (Anitec) Site, Site No. 704022, is located at 40 Charles Street in the City of Binghamton, Broome County, New York. Anitec maintains and operates a manufacturing facility on the site. The site occupies a property of approximately 35 acres. Immediately adjacent to the facility are the Spring Forest Cemetery and a cogeneration power facility as well as residential and industrial areas. The location of the Anitec facility is shown on Figure 1.

Operable Unit Nos. 1,3,4,&5 are the subject of this PRAP. See figure 2 for the locations of these operable units. Operable Unit 1 (OU1) consists of the former Building #8 Powerhouse and the associated coal storage area. This parcel of property is not contiguous to Anitec Image's main plant site. It is located southwest of the main plant site on Clinton Street. Operable Unit 3 (OU3) involves two separate areas located on the main plant site. The Building 95 area was used to remove ammonia from a liquid waste stream prior to treatment at Anitec's Bldg 96 wastewater pretreatment plant. Ammonia removal was performed to adjust the pH of the waste stream containing residual cadmium. By adjusting the pH the cadmium could be effectively removed at the Bldg 96 wastewater pretreatment plant. Both areas require remediation due to high levels of silver and cadmium in soils. Operable Unit 4 (OU4) involves two contiguous areas on the east side of the main plant site. Low level VOCs have been detected in site soils in these two areas. Operable Unit 5 (OU5) addresses all groundwater under the main plant site. Low levels of VOCs have been detected at various locations in a portion of the aquifer located under the main plant site.

An Operable Unit represents a discrete portion of the remedy for a site which for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the contamination present at a site. The remaining operable unit(s) for this site are described in Section 2.2 below.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Anitec Image, Division of International Paper Company ("Anitec") operates an imaging products manufacturing facility in Binghamton, New York. The facility has operated under a succession of different owners. In 1902, a merger between Anthony Company and Scovill & Adams Company resulted in the name Ansco. General Aniline Film (GAF) operated the facility from 1942 to 1981. In 1981, a group of investors formed Anitec Image Corporation and purchased the facility from GAF. International Paper Company purchased Anitec in December 1987, and in January 1990, Anitec was merged into International Paper Company. Site contamination is due largely to historical leaks from buried chemical storage tanks and pipes and aboveground process tanks, containers and pipeline leaks.

2.2: Remedial History

This site was selected as a Multi Media Pollution Prevention (M^2P^2) Facility in May 1991. The New York State Department of Law and the DEC required Anitec to perform various programs to address M^2P^2

concerns identified at this site. Anitec has completed most of the required programs. On October 15, 1992 Anitec and the DEC entered into a consent order requiring Anitec to perform a remedial investigation/feasibility study(RI/FS). Prior to entering into the RI/FS consent order the following remedial measures were performed;

- In 1988 the below ground chemical storage tanks located at the Building 32 area were removed. At that time the DEC required Anitec to dispose of contaminated soil excavated during tank removal. Approximately 200 cubic yards of soil were removed.

- In 1990 a soil vapor extraction system was install to remove volatile organic compounds (VOCs) from subsurface soils in the Buildings 14 & 32 areas.

- Removal of a residual coal pile from the Bldg. 8 Powerhouse.

The property located at 51 Mygatt Street is known as Operable Unit No. 2 (OU2). A Record of Decision was signed in March 1995 for OU2. Soils containing elevated levels of cadmium, silver, barium and arsenic have been remediated at the 51 Mygatt Street Site. The removal of the contaminated soil was completed in December. 1995 Final site restoration will be completed by May 1996.

Operable Unit 6 (OU6) addresses the historic impact of inorganic compounds to the Chenango River discharged from this facility. The remedial investigation of this operable unit is currently underway.

OU2 and OU6 are not addressed as part of this PRAP.

SECTION 3: CURRENT STATUS

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

3.1: Summary of the Remedial Investigation

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

The RI was conducted in 2 phases. The first phase was conducted between October 1993 and February 1995 the second phase between May 1995 and August 1995. The "Remedial Investigation Report" dated February 1995, the "Phase 2 Remedial Investigation Report" dated August 1995, "Operable Unit 3-Building 95 and 96 Feasibility Study" dated December 1995, "Operable Unit 4-Building 32 and EHPK Lot Feasibility Study" dated December 1995, "Operable Unit 5-Site Groundwater Feasibility Study" dated December 1995 and the"Remedial Investigation/Focused Feasibility Study, Anitec Image Division, Building 8, Binghamton New York" dated February 1995, have been prepared describing the field activities and findings of the RI in detail.

The RI activities included the following:

- Soil gas investigative work was performed to determine areas of high VOCs.
- Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.
- Placement of soil borings at below grade process and waste pipe locations to identify areas of possible historic releases.
- Investigation of transformer room located at the former Powerhouse.
- Production well pump tests were performed to better understand aquifer characteristics.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance (SCGs) . Groundwater, drinking water and surface water SCGs identified for the Anitec Image site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. NYSDEC TAGM 4030 soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soil and the Division of Fish and Wildlife Technical Guidance for Screening Contaminated Sediments is used for surface water sediments.

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

Chemical concentrations are reported in parts per billion (ppb), parts per million (ppm). For comparison purposes, SCGs are given for each medium.

3.1.1 Nature of Contamination:

As described in the RI Report, many soil, groundwater and sediment samples were collected at the site to characterize the nature and extent of contamination.

Soils, sediments, and groundwater were sampled for volatile organic compounds (VOCs), semivolitale organic compounds (SVOCs), inorganics and polychlorobiphenyls (PCBs) at all of the operable units.

In general the following contamination was found to exist;

OU1 (BLDG 8) PCBs were detected in the former transformer room at the decommissioned powerhouse. Concrete surfaces were found to have levels of PCBs in excess of the federal regulatory guideline for restricted areas of 10 micro grams/100 cm^2. The remediation of the concrete surfaces inside the transformer room is nearly complete and is referred to as the IRM Transformer Room. It has been determined that PCBs have entered a drywell associated with the transformer room. The investigation and possible remediation of the drywell area will also be addressed as an IRM. This IRM will be referred to as the IRM Drywell. Possible groundwater PCB contamination will be investigated as part of the IRM Drywell. Both IRMs will be explained further in Section 3.2.

OU3 (BLDG 95 & 96) cadmium exists in soils at levels which are considered to be hazardous by state and federal law and regulation. Cadmium is determined to be a hazardous waste if the waste has a value of 1.0 ppm or greater by performing the Toxicity Characteristic Leaching Procedure (TCLP) test method. Soils in the BLDG 95 area were found to have levels of cadmium in excess of the TCLP limit, the levels ranged from ND to 33.0 ppm. Soils in the BLDG 96 area were found to have levels of cadmium in excess of the TCLP limit, the levels ranged from ND to 3.5 ppm.

Surface soils, 0 to 2 feet in depth, that are determined to be nonhazardous (cadmium less than 1 ppm based on a TCLP analysis) but are found to be in excess of the SCG of 10 ppm (based on a total metals analysis) will also be remediated. Subsurface soils, greater than 2 feet in depth, that are determined to be nonhazardous but are found to be in excess of 50 ppm (total metal analysis) will be remediated. Soils with silver levels in excess of the background level of 4.1 ppm (total metal analysis) are located within the areas requiring remediation for cadmium and will be remediated with the cadmium contaminated soils.

Groundwater in the BLDG 95 and 96 areas has levels of inorganic compounds that consistently exceed State groundwater standards. BLDG 95 area groundwater contaminants include aluminum, iron and sodium. Cadmium and vanadium exceeded standards only once in the sampling of the monitoring wells. In the BLDG 96 area, inorganic compounds detected in the groundwater include aluminum, iron, manganese and sodium which are not site related and do not require remediation.

OU4 (BLDG 32 & EHPK) VOCs and SVOCs were detected in site soils in these areas. The VOCs and the SVOCs detected in the EHPK lot area are primarily due to historic dumping of construction and demolition(C&D) type of materials. The compounds of concern are listed on figure 2. This dumping was evident by trenching performed in this area.

Groundwater in the BLDG 32 and EHPK has the following compounds above state groundwater standards; acetone, methanol, 2-butanone, benzene, 4-methyl-2-pentanone, phenol, 4-methylphenol, iron, manganese, magnesium, barium, aluminum, antimony, cobalt and sodium. Groundwater contamination associated with this operable unit will be addressed by OU5.

OU5 (Site Groundwater) VOCs, SVOCs, and inorganic compounds have been detected in the groundwater. Various contaminants are in excess of state groundwater standards as shown on Table 3.

Section 3.3 below describes the types of human exposures to the contaminants identified that may present added health risks to people at or around the site and Section 4.4 discusses the environmental exposures.

3.1.2 Extent of Contamination

Listed below is a description of the extent of contamination, by media affected, for each of the four operable units.

OU1 (BLDG 8) PCBs were detected in the former transformer room at the abandoned powerhouse. The PCB contamination detected on various concrete surfaces is above the current regulatory guideline for

surface contamination of PCBs in a restricted access area. The regulatory guideline value for a surface is 10 ug/ 100 cm^2. PCB contamination has been removed from most of the concrete surfaces. The concrete surfaces which continue to show elevated levels of PCBs will be removed as part of the IRM Transformer Room. PCBs have also been detected in a floor drain in excess of the DEC's regulatory standard of 50 ppm. The level detected in the floor drain is 600 ppm. PCB levels of 50 ppm or above are defined as hazardous waste. The SCGs established for unrestricted use of PCBs in soil is 10 ppm for subsurface soil and 1 ppm for surface soil. This PCB contamination is being addressed as IRM Drywell at this operable unit as described in section 4.2.

Slightly elevated levels of inorganic compounds were detected in excess of the State groundwater standards (STD) at this operable unit. The inorganics detected in groundwater are not site related and will not be considered for remediation since they represent background conditions.

OU3 (BLDG 95 & 96) Surface and subsurfaces soils in two areas around Building 95 have been impacted due to cadmium contamination. One area is approximately 5,460 square feet with cadmium exceeding cleanup guidelines up to 32 feet below ground surface (See Figure 3). The other area is approximately 1,500 square feet with cadmium contamination exceeding cleanup guidelines up to 17.5 feet below ground surface. The total volume of soil exceeding the cleanup criteria is approximately 3,700 cubic yards.

Surface soils (top two feet) in the area of Building 96 have been impacted by cadmium contamination. Approximately 1,500 square feet (125 cubic yards) of surface soils adjacent to Building 96 and the clarifier exhibit levels of cadmium above the soil cleanup guidance (See Figure 4).

Table 1 summarizes the extent of contamination for the OU3 contaminants of concern in site soils and compares the data with the proposed remedial action levels for the Site.

OU4 (BLDG 32 & EHPK) is approximately 2 acres in size. Methylene chloride was detected at concentrations above the SCGs in only one sample in the Bldg 32 area. Acetone was detected above the SCGs in three borings obtained from the EHPK lot area. Benzene and 2-Butanone were also detected in one of the borings in the EHPK lot. Low levels of VOCs and SVOCs were detected in the groundwater in this area. Groundwater contamination in this area would be addressed by OU5 (See Figure 5).

Table 2 summarizes the extent of contamination for the OU4 contaminants of concern in site soils and compares the data with the proposed remedial action levels for the Site.

OU5 (Site Groundwater) addresses all present site groundwater contamination. Three VOCs were found to exceed the SCGs in the North Yard. One VOC was elevated in the area of Bldg 86. Four compounds exceeded the SCGs in the Bldg 32 & EHPK area. SVOCs were found in the North Yard and Bldg 32 area. The inorganics, sodium, iron magnesium, barium and aluminum detected are not site related and will not be remediated (See Figure 6).

Table 3 summarizes the current extent of contamination for the OU5 contaminants of concern in site groundwater and compares the data with the proposed remedial action levels for the Site. It should be noted that all of the sources of groundwater contamination have been eliminated. The existing production well network has been effectively removing groundwater contamination since the removal of the sources.

3.2 Interim Remedial Measures:

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

OU1 (BLDG 8) is currently undergoing an IRM(Transformer Room) to remove PCB contamination from the transformer room of the decommissioned powerhouse at BLDG 8. Aroclor - 1260 was detected in wipe samples taken on concrete surface areas inside of the transformer room. The level of PCBs ranged from 500 ug/100cm^2 to 135000 ug/100cm^2 at various locations on the concrete surfaces. A second IRM(Drywell) has been initiated to address the PCB contamination associated with a drywell. PCBs were detected in sediments in a drywell at a level of 600 ppm.

Table 1
Operable Unit 3 - Bldg. 95 & 96

Nature and Extent of Contamination

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm) (total concentrations)	FREQUENCY Detections to Samples	SCG ppm
Soil	Inorganic	Cadmium	ND-3760 ppm	50/53	10
		Silver	ND-128 ppm	16/53	4.1

Table 2
Operable Unit 4 - Bldg. 32 & 96

Nature and Extent of Contamination

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm) (total concentrations)	FREQUENCY Detections to Samples	SCG ppm
Soil	VOC & SVOC	Acetone	0.35-0.99	3/40	0.2
		Benzene	0.13	1/40	0.06
		2-Butanone	0.38	1/40	0.3
		Methylene chloride	0.4	1/40	0.1
		Benzo(a)anthracene	0.26-46	5/40	0.22
		Benzo(a)pyrene	0.063-26	15/40	0.06
		Benzo(b)fluoranthene	1.6-20	2/40	1.1
		Benzo(k)fluoranthene	1.6-24	2/40	1.1
		Chrysene	0.46-50	4/40	0.4
		Dibenzofuran	90	1/40	6.2
		Indeno(1,2,3-cd)pyrene	10	1/40	3.2
		Naphthalene	310	1/40	13
		2-Methylphenol	110	1/40	0.1
		4-Methylphenol	2.2	1/40	0.9
		Phenanthrene	300	1/40	50
		Phenol	0.065-0.078	3/40	0.03

Table 3
Operable Unit 5 - Site Groundwater

Nature and Extent of Contamination

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY Exceedance to Samples	SCG ppb
Groundwater	VOC & SVOC	1,1 Dichloroethane	0.4-8.2	2/42	5
		1,2-Dichloroethane	0.6-7.5	2/42	5
		2-Butanone	1-1200	2/42	50
		4-Methyl-2-Pentanone	78-270	3/42	50
		4-Methylphenol	7-430	2/42	1
		Acetone	13-73000	2/42	50
		Benzene	0.5-10	4/42	0.7
		Chloroform	1-11	2/42	7
		Methanol	2600-11000	2/42	50
		bis-(2-Ethylhexyl) phthalate	72	1/42	50
		Phenol	1-11	2/42	1

3.3 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 5.0 of the Phase 2 RI Report.

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

There are no known completed pathways currently resulting in exposures on the site or in the community.

Environmental media investigated and the results include:

- Ambient air - Volatile organic chemicals (VOCs) and heavy metals were discharged to the atmosphere. VOC losses have been identified and controlled either by eliminating manufacturing processes and by replacement with less toxic chemicals and by eliminating fugitive releases of chemicals (methylene chloride). A year long Ambient Air Study has confirmed the success of these efforts. Metals discharges (silver, cadmium, and barium) were from a silver recovery smelter which ceased operation in the mid 1970's. The metals were deposited in a small section of an adjacent cemetery. The surface soils in the cemetery contaminated by these metals have been excavated and removed.

- Vadose gases - VOCs were lost to the soils on the site, primarily through leakage. This resulted in the presence of these volatiles in the soil gases which reside in the voids in the soil above the groundwater table. Sources of vadose contamination were identified and remediated. Multiple soil gas and indoor air quality investigations have confirmed that there is no impact to homes.

- Soils - VOCs and metals were lost to soils on the site. The resulting contamination has been located and either has been removed or will be removed in subsequent remedial efforts. The sources of the contamination have been identified and controlled. The soils in the area of buildings 95 and 96 on the site do present a concern regarding potential site worker exposures to the metal cadmium during routine maintenance/excavation activities. Remediation of the site will address this exposure concern. The site is secured and trespass is unlikely.

- Surface water and stream sediments - Discharges of VOCs and metals to Trout Brook, and via that stream to the Chenango River, have resulted in residual sediment contamination in the river in the immediate vicinity of the Trout Brook outfall. Additional investigative work will be done and any necessary remedial action will be carried out as part of a separate Operable Unit not addressed in this PRAP. It is currently uncertain if the sediment contamination actually represents a human exposure concern.

- Groundwater - Site contaminants have impacted groundwater at the site. Anitec has maintained high volume pumping of its production wells, which are located on or near the site. This pumping has created and maintained a groundwater capture network which draws groundwater from a

considerable distance on and around the site. This water is used for Anitec's industrial processes, not for human consumption. Backflow prevention devices have been installed to ensure that the process water plumbing is separate from the potable water and the City of Binghamton water supply. Monitoring data indicates that concentrations of contaminants in groundwater at the site are diminishing. The elements of the selected remedial alternative for groundwater are set forth in Section 8 of this PRAP and provide for protection of the aquifer, including continued pumping of the production wells to prevent groundwater contamination from migrating to off-site locations.

3.4 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The Fish and Wildlife Impact Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The following pathways for environmental exposure have been identified:

An environmental exposure pathways was identified and investigated. Trout Brook flows through the Anitec Image plant site encased in a 60 inch concrete pipe. This stream received both regulated and unregulated liquid discharges from the Anitec facility. Based on the sediment sampling performed in the section under the Anitec Image plant site proper, no remediation is necessary. The historical impact of past unregulated liquid discharges to the Chenango River has been confirmed and is currently under investigation. This is being investigated as Operable Unit 6 (OU6) and is not a subject of this PRAP.

SECTION 4: ENFORCEMENT STATUS

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

The NYSDEC and the Anitec Image entered into a Consent Order on October 15, 1992. The Order obligates Anitec Image to implement a full remedial program.

Order on Consent

Date	Index	Subject
10/15/92	A702739105	RI/FS

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment.

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

The goals selected for this site are:

- *Reduce, control, or eliminate to the extent practicable the contamination present within the soils/waste on site.*
- *Eliminate the potential for direct human (worker) contact with the contaminated soils on site.*
- *Mitigate the impacts of contaminated groundwater to the environment.*
- *Provide for attainment of SCGs for groundwater quality at the limits of the area of concern (AOC), to the extent practicable.*

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Each selected remedy should be protective of human health and the environment, be cost effective, comply with other staturatory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practible. Potential remedial alternatives for the Anitec Image site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the following reports entitled:

- "Operable Unit 3- Building 95 and 96 Feasibility Study" dated December 1995
- "Operable Unit 4-Building 32 and EHPK Lot Feasibility Study" dated December 1995
- "Operable Unit 5-Site Groundwater Feasibility Study" dated December 1995
- "Remedial Investigation/Focused Feasibility Study, Anitec Image Division, Building 8, Binghamton New York" dated February 1995

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils and groundwater the site.

OPERABLE UNIT 1 - BLDG 8

No Further Action

This alternative is based on the satisfactory completion of both the IRM Transformer Room, concrete surface remediation, and the IRM Drywell, drywell and surrounding soils, to address the PCBs at the former powerhouse. Conformational sampling will be performed to evaluate the effectiveness of the remediation upon completion of the IRMs.

OPERABLE UNIT 3 - BLDGS 95 & 96

Alternative 1 - No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth:	$ 845
Capital Cost:	$ 0
PW Annual O&M:	$ 845

Alternative 2 - Limited Action

This alternative would involve the use physical and institutional controls such as fencing and deed restrictions. Monitoring of soils and groundwater would be included in the limited action response. This alternative would not reduce contaminant levels.

Present Worth:	$ 9,195
Capital Cost:	$ 8,350
PW Annual O&M:	$ 845
Time to Implement	6 months - 1 year

Alternative 3 - Soil Stabilization and Capping Building 95 & 96

This alternative involves the stabilization of contaminated soils at both the Bldg 95 and 96 areas and asphalt capping the area, to be sloped to a storm drain, after stabilization. Bldg 95 soils would be stabilized in place (in situ), Bldg 96 soils would be treated after being excavated (ex situ) and would be placed back into the excavated areas. Surface and subsurfaces soils in two areas around Building 95 would be remediated. One area is approximately 5,460 square feet with cadmium exceeding cleanup guidelines up to 32 feet below ground surface (See Figure 3). The other area is approximately 1,500 square feet with cadmium contamination exceeding cleanup guidelines up to 17.5 feet below ground surface. The total volume of soil exceeding the cleanup criteria is approximately 3,700 cubic yards.

Surface soils (top two feet) in the area of Building 96 have been impacted by cadmium contamination. Approximately 1,500 square feet (125 cubic yards) of surface soils adjacent to Building 96 and the clarifier exhibit levels of cadmium above the soil cleanup guidance (See Figure 4).

Stabilization is a process by which contaminated soils can be solidified or chemically fixed to reduce the mobility and toxicity of the contaminants. Stabilization would prevent the leaching of the inorganic contaminants from the soils and would render the soils nonhazardous. The cleanup levels would be the SCG shown on Table 1 for each of the contaminants of concern.

Present Worth:	$ 983,901
Capital Cost:	$ 980,350
PW Annual O&M:	$ 3,551
Time to Implement	1 year

Alternative 4 - Stabilization of Subsurface Soils at BLDG 95 - Surface Soil Excavation and Disposal at 95 & 96

This alternative would include excavation of surface soils in the Bldg 95 and 96 areas(673 cubic yards), proper soil disposal at an off-site permitted facility, and soil stabilization of subsurface soils(9514 cubic yards) in the Bldg 95 area. The cleanup levels would be the SCG shown on Table 1 for each of the contaminants of concern.

Present Worth:	*$ 1,132,417*
Capital Cost:	*$ 1,129,035*
PW Annual O&M:	*$ 3,382*
Time to Implement	*1 year*

Alternative 5 - Capping

This alternative would involve capping the contaminated area with asphalt and monitoring groundwater only. This alternative would not reduce contaminant levels.

Present Worth:	*$ 36,785*
Capital Cost:	*$ 32,388*
PW Annual O&M:	*$ 4,396*
Time to Implement	*6 months*

OPERABLE UNIT 4 - BLDG 32 & EHPK Lot

Alternative 1 - No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It would require continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth:	*$ 17,755*
Capital Cost:	*$ 0*
PW Annual O&M:	*$ 17,755*

Alternative 2 - Limited Action

This alternative would involve the use of physical and institutional controls such as fencing and deed restrictions. Monitoring of soils and groundwater would be included in the limited action response. This alternative would not reduce contaminant levels.

Present Worth:	*$ 38,379*
Capital Cost:	*$ 20,625*
PW Annual O&M:	*$ 17,755*
Time to Implement	*6 months - 1 year*

Alternative 3 - Capping

This alternative would involve capping the contaminated area with asphalt and monitoring groundwater only. This alternative would not reduce contaminant levels.

Present Worth:	*$ 25,903*
Capital Cost:	*$ 8,148*
PW Annual O&M:	*$ 25,903*
Time to Implement	*6 months*

Alternative 4 - Soil Excavation and Off-Site Disposal

This alternative would include excavation of 7047 cubic yards of soil in the Bldg 32 and EHPK Lot areas and proper soil disposal at an off-site permitted facility.

Present Worth:	*$ 961,731*
Capital Cost:	*$ 961,731*
PW Annual O&M:	*$ 0*
Time to Implement	*6 months - 1 year*

OPERABLE UNIT 5 - SITE GROUNDWATER

Alternative 1 - No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It would require continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth:	*$ 377,921*
Capital Cost:	*$ 0*

PW Annual O&M:	*$ 377,921*

Alternative 2 - Limited Action

This alternative would include groundwater monitoring and the identification of an alternative water resources for the facility and off-site receptors if needed; this alternative would not include continued operation of the current groundwater extraction wells. This alternative would not reduce contaminant levels.

Present Worth:	*$ 380,671*
Capital Cost:	*$ 2,750*
PW Annual O&M:	*$ 377,921*
Time to Implement	*6 months - 1 year*

Alternative 3 - Hydraulic Control

This alternative would include groundwater monitoring and would continue to maintain hydraulic control by extraction of groundwater by the current pumping well system. The current pumping system withdraws an estimated 3 million gallons of water/day from the aquifer. Should the Anitec facility not need or desire to continue pumping the aquifer, because the quantity of water necessary for operations at the Site changes, the selected remedial alternative for the Site would be reviewed based on the most current monitoring information to determine the appropriate measures to be taken at the time. This evaluation would be performed prior to any modifications being made in the pumping rates of the wells. In addition, the effectiveness of this remedial alternative would be evaluated on a 5-year basis.

Present Worth:	*$ 3,787,154**
Capital Cost:	*$ 0*
PW Annual O&M:	*$ 3,787,154*
Time to Implement-	
currently implemented.	

* The incremental increase of the present worth cost to use the existing production well system for remediation would be $23,620.

Alternative 4a - Pump and Air Stripper Treatment

This alternative would include installation extraction wells in the areas that exceed groundwater quality standards and treatment of the groundwater by air stripping prior to discharge to surface water. This alternative would also include groundwater monitoring.

Present Worth:	*$ 11,843,386*
Capital Cost:	*$ 7,734,958*
PW Annual O&M:	*$ 4,108,428*
Time to Implement	*1 year*

Alternative 4b - Pump and Carbon Adsorption Treatment

This alternative would include the installation extraction wells in the areas that exceed groundwater quality standards and treatment of the groundwater by carbon adsorption prior to discharge to surface water. This alternative would also include groundwater monitoring.

Present Worth:	*$ 10,496,376*
Capital Cost:	*$ 892,458*
PW Annual O&M:	*$ 9,603,918*
Time to Implement	*1 year*

6.2 Evaluation of Remedial Alternatives

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

OPERABLE UNIT 1
BLDG 8

OU1(BLDG 8) will not require remediation beyond the completion of the IRMs addressing the PCB contamination currently underway. The IRM (Transformer Room) will address the PCB contamination associated with the concrete surfaces inside the transformer room. The IRM (Drywell) will address the PCB contamination associated with the drywell area. The RAOs will be met upon completion of the IRMs.

OPERABLE UNIT 3
BLDGS 95 & 96

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.

Alternative 1, 2 & 5 would not meet soil SCGs since the contaminants would remain inplace and untreated.
Alternative 3 & 4 would meet the soil SCGs by immobilizing the inorganics.

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

Alternative 1 & 2 would leave an unacceptable risk to the environment by the possible leaching of untreated of hazardous waste.
Alternative 3 & 4 would reduce the risk to site workers and the environment by immobilizing the metals.
Alternative 5 would prevent contact with the contaminants.

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/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternative 1 & 2 would not cause any short term effects, since no implementation would be required.
Alternative 3,4 & 5 would require health and safety measures to minimize risk to workers during excavation and treatment of the contaminated soil.

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

Alternative 1 & 2 would not meet the criteria for long term effectiveness and permanence.
Alternative 3,4 & 5 would meet the criteria for long term effectiveness and permanence. Alternatives 3 and 4 would be more effective than 5 because the contaminated soil would be either stabilized (alt. 3) or removed (alt. 4).

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

Alternative 1 & 2 would not reduce the toxicity and mobility (TM) of the contaminants of concern, alternative 3 & 4 would reduce the T&M of the contaminants, alternative 5 would reduce the mobility only.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Alternatives 1 & 2 would require no implementation.
Alternatives 3,4 & 5 would not be difficult to implement, and the technologies are readily available.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 4.

OPERABLE UNIT 4
BLDG 32 & EHPK LOT

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.

Alternatives 1,2 and 3 would not meet the soil SCGs, alternative 4 would.

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

The risk assessment indicates that the soils addressed in this operable unit do not pose an unacceptable risk to human health and the environmental impact on groundwater is addressed by the OU5 remedy.

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/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

There would be no additional risk for the community, workers or the environment for any of the alternatives.

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

Alternatives 1 and 2 would not meet RAOs, alternatives 3 and 4 would meet the RAOs.

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

Alternative 1 & 2 would not actively reduce toxicity, mobility or volume (TMV), although it may be anticipated that natural degradation will reduce the TMV of VOCs over time.
Alternative 3 would reduce only the mobility of contaminants over time.
Alternative 4 would reduce the TMV of the contaminants.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Alternatives 1,2 & 3 would require no implementation.
Alternative 4 would be difficult to implement due to difficulties associated with the excavation of construction and demolition debris.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 5 .

OPERABLE UNIT 5
SITE GROUNDWATER

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.

Alternatives 1 and 2 would not actively meet groundwater quality standards.
Alternative 3, 4a and 4b would meet off-site groundwater quality standards and on-site groundwater quality standards in time.

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

Alternatives 1 and 2 would not address the unacceptable potential risk to human health and the environment if the current groundwater extraction were to cease.
Alternatives 3, 4a and 4b would address the potential risk to human health and the environment.

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/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 1, 2, 3, 4a and 4b would not pose any potential impacts to the community or workers during implementation.

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

Alternatives 1 and 2 would not actively meet the RAOs, alternatives 3, 4a and 4b would be expected to actively meet the RAOs.

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

Alternative 1 & 2 would not actively reduce toxicity, mobility or volume (TMV) of the contaminants in the groundwater.

Alternatives 3, 4a and 4b would actively reduce the TMV of the contaminants of the groundwater by the withdrawal of groundwater from the aquifer and monitoring the surface discharge (alt 3) or groundwater withdrawal with treatment (alts. 4a & 4b).

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Alternatives 1, 2, 3, 4a and 4b would not be expected to create implementation difficulties.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 6.

Community Acceptance

Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The " Responsiveness Summary", included as Appendix A, presents the public comments received and the Department's response to the concerns raised. In general the public comments received were supportive of the selected remedy.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

OPERABLE UNIT 1
BLDG 8

Based upon the results of the RI/FS, two Interim Remedial Measures (IRMs) for Operable Unit 1 (OU1), Building 8, Powerhouse, to address PCB contamination inside a transformer room and in an associated drywell are currently underway.

These ongoing IRMs will address the only identified contamination associated with this operable unit. Therefore, since an evaluation of possible remedial alternatives was not necessary, No Further Action, pending the completion of the IRMs is the selected remedial alternative for OU1.

OPERABLE UNIT 3
BLDG 95 & 96

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative 3, Soil Stabilization and Capping Building 95 & 96, as the remedy for operable unit 3 of this site.

This selection is based upon the following evaluation;

All remedial alternatives are implementable. The risk assessment for the site indicates that potential unacceptable risk to human health exists due to surface soil contamination; therefore, no action would not be protective of human health. Since hazardous waste exists in soils at levels that could leach to groundwater, there exists an unacceptable risk to the environment. No action (alternative 1) & limited action (alternative 2) are unacceptable for these reasons. The Remedial alternatives 1 and 2 will not meet the RAOs for the site. Both alternatives 3 and 4 meet the intent of the soil cleanup guidance for protection of groundwater by immobilizing cadmium in the soil. Alternative 4 would provide some additional level of protection against exposure to cadmium-containing soils by disposing of easily accessible soils off-site. Alternative 5 may meet the RAOs but does not meet the soil cleanup guidelines and leaves hazardous soils on-site. Alternatives 1,2 and 5 are not recommended because they will not render the hazardous soils nonhazardous, as alternatives 3 and 4 would. Alternative 3 will include solidification of all soils above cleanup guidance by most appropriate/implementable methods. Alternative 4 will include excavation of surface soils and disposal off-site. Because alternative 3 will be less costly, and will achieve an appropriate level of protection, it has been selected as the preferred remedial alternative.
The estimated present worth cost to implement the remedy is $983,901. The cost to construct the remedy is estimated to be $980,350 and the estimated average annual operation and maintenance present worth cost for 30 years is $3,551.

The elements of the selected remedy are as follows:

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

2. Solidification of Building 95 soils. This process will be performed in-situ at this location. An estimated 3,700 cubic yards of soil will be remediated at the Bldg 95 area. All of the soil that is characteristic hazardous waste will be rendered nonhazardous by a solidification process. Soils that are nonhazardous but exceed the soil SCGs of 10 ppm surface and 50 ppm subsurface, for the inorganic compounds of concern will also be solidified by this remedy.

3. Solidification of Building 96 soils. This process will be performed ex-situ at this location. All of the soil that is characteristic hazardous waste will be excavated and rendered nonhazardous by a solidification process. Soils that are non hazardous but exceed SCGS for the inorganic compounds of concern will also be solidified. An estimated 125 cubic yards of contaminated soil will be remediated in the Bldg 96 area. The treated wastes will be placed back into the excavated areas.

4. After treatment of soils both the Bldg 95 and 96 areas will be graded and capped with asphalt. The asphalt cap will be of the proper thickness and porosity to minimize leaching (See Figures 3 & 4 for areas to be remediated).

5. Confirmatory sampling will be performed to verify the effectiveness of the solidification process in both areas of remediation.

6. Groundwater will be monitored to determine the effects of this remedation as addressed in Operable Unit 5.

OPERABLE UNIT 4
BLDG 32 & EHPK LOT

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative 1, No Action, as the remedy for this operable unit of this site.

This selection is based upon the following comparisons and explanations;

Since there will be no measurable benefit achieved by implementing Alternatives 2, 3 or 4, Alternative 1 (No Action) has been selected for OU4. Groundwater impacts associated with this operable unit will be addressed by OU5.

The estimated present worth cost to implement the remedy is $17,755. This cost based on the estimated average annual operation and maintenance present worth cost for 30 years. The operation and maintenance will include inspection and repair of the existing asphalt surface and inspection and repair of the storm drains.

OPERABLE UNIT 5
SITE GROUNDWATER

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative 3, Hydraulic Control, as the remedy for this operable unit of the site.

This selection is based upon the following comparisons and explanations;

Alternatives 3, 4a and 4b included hydraulic control of groundwater to prevent off-site migration of contaminants and the no action and the limited action will be unacceptable because hydraulic control of the contaminated groundwater will be required to meet the ARARs and the RAOs for the site. A comparative analysis between the remedial alternative 3 and 4a&b show that remedial alternative 3 will meet ARARs without the addition of treatment methods and by the current practices in use at the site. The Anitec facility is currently pumping groundwater for use in the plant and discharging the water to the surface water without treatment and within the limits of their SPDES permit. Since, the cost of pump and treat options would require installing new wells and a treatment facility, these alternatives significantly increase the cost to the facility and would not add any additional benefit with respect to meeting ARARs, or reduction in risk. Therefore, the recommended alternative is alternative 3-hydraulic control.

The estimated present worth cost to implement the remedy is $3,787,154. This cost is based on an estimated average annual operation and maintenance present worth cost for 30 years. There will not be any capital cost associated with this remedial alternative primarily due to the incorporation of the existing extraction wells in the remedy.

The elements of the selected remedy are as follows:

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

2. The withdrawal of low levels of contaminated groundwater from all areas of known contamination identified on the plant site (See Figure 7). The discharge will be monitored by sampling performed on the SPDES outfalls.

3. Semiannual monitoring of various monitoring wells to determine effectiveness of the withdrawal system.

4. Semiannual reporting of the volume of water pumped from each production well, and the total volume pumped.

5. The overall effectiveness of the entire system will be evaluated on a five year basis.

6. If plant operational changes require a 25% or greater reduction in pumping demands, prior notification will be required and the selected remedial alternative will be re-evaluated to determine its effectiveness. If this alternative is then determined to no longer be effective, based on information from current measurements of groundwater quality and contours, another remedial alternative may be selected.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- A Fact Sheet was prepared and mailed to everyone on the established mailing list.
- A public meeting was held on February 13, 1996 to present the PRAP to the public and to solicit formal comments from the public.
- In March, 1996 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

Table 4
Anitec Image - Operable Unit 3
BLDG 95 & 96

Estimated Alternative Costs

Alt. No.	Description of Alternative	Est. Cost		
No. 1	No Action	Capital Cost Annual O&M Present Worth	$ $ $	0 845 845
No. 2	Limited Action	Capital Cost Annual O&M Present Worth	$ $ $	8,350 845 9,195
No. 3	Soil Stabilization and Capping Bldg. 95 & 96	Capital Cost Annual O&M Present Worth	$ $ $	980,350 3,551 983,901
No. 4	Stabilization of Subsurface Soils at Bldg. 95 - Surface Soil Excavation and Disposal at 95 & 96	Capital Cost Annual O&M Present Worth	$ $ $	1,129,035 3,382 1,132,417
No. 5	Capping	Capital Cost Annual O&M Present Worth	$ $ $	32,388 4,396 36,785

Annual O&M cost shown is the present worth value of the annual O&M cost.

Table 5
Anitec Image - Operable Unit 4
BLDG 32 & EHPK Lot

Estimated Alternative Costs

Alt. No.	Description of Alternative	Est. Cost		
No. 1	No Action	Capital Cost	$	0
		Annual O&M	$	17,775
		Present Worth	$	17,775
No. 2	Limited Action	Capital Cost	$	20,625
		Annual O&M	$	17,775
		Present Worth	$	38,379
No. 3	Capping	Capital Cost	$	8,148
		Annual O&M	$	17,755
		Present Worth	$	25,903
No. 4	Soil Excavation and Off-Site Disposal	Capital Cost	$	961,731
		Annual O&M	$	0
		Present Worth	$	961,731

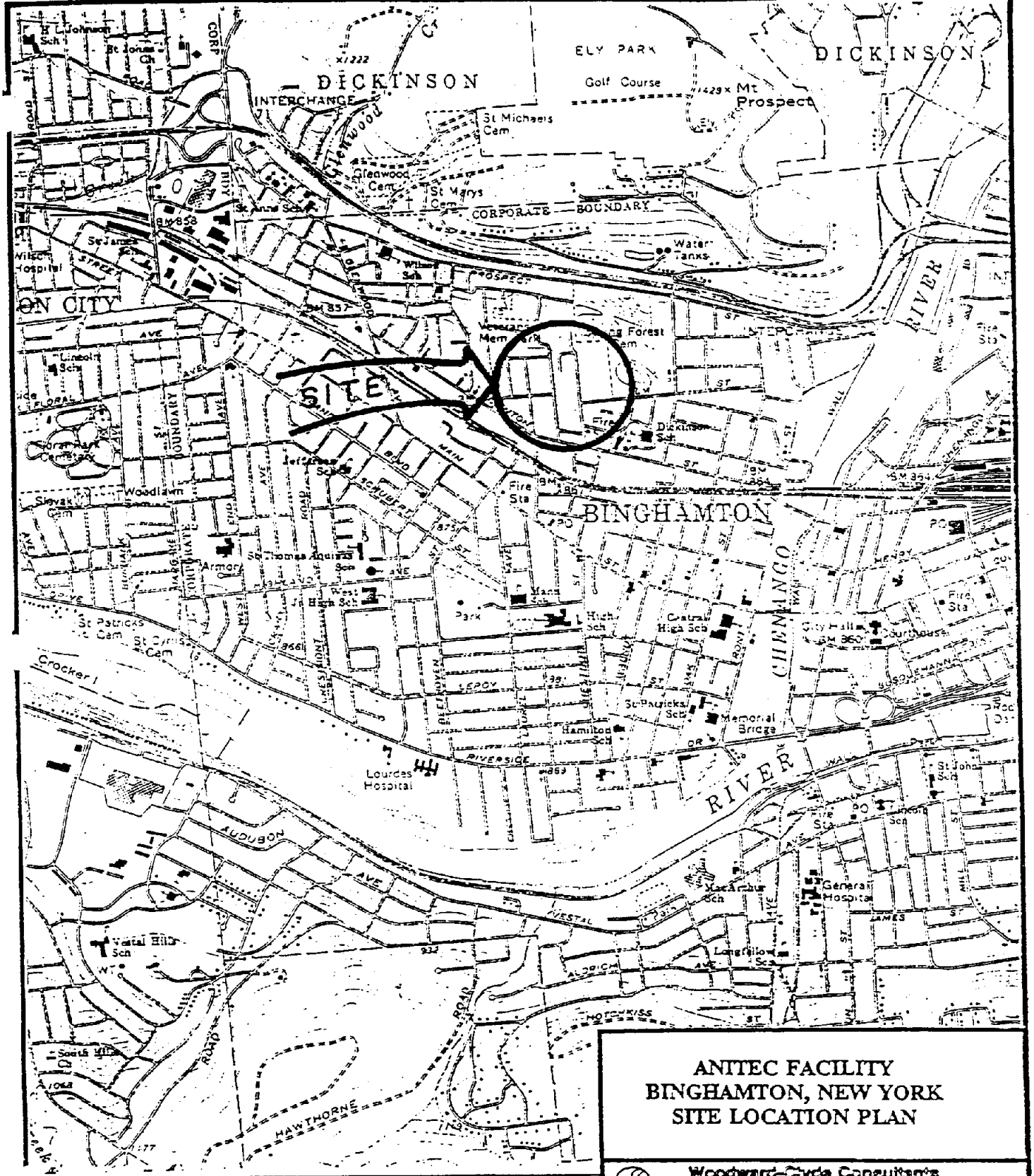
Annual O&M cost shown is the present worth value of the annual O&M cost.

Table 6
Anitec Image - Operable Unit 5
Site Groundwater

Estimated Alternative Costs

Alt. No.	Description of Alternative	Est. Cost		
No. 1	No Action	Capital Cost	$	0
		Annual O&M	$	377,921
		Present Worth	$	377,921
No. 2	Limited Action	Capital Cost	$	2,750
		Annual O&M	$	377,921
		Present Worth	$	380,671
No. 3	Hydraulic Control	Capital Cost	$	0
		Annual O&M	$	3,787,154
		Present Worth	$	3,787,154
No. 4a	Pump and Air Stripper Treatment	Capital Cost	$	7,734,958
		Annual O&M	$	4,108,428
		Present Worth	$	11,843,386
No. 4b	Pump and Carbon Adsorption Treatment	Capital Cost	$	892,458
		Annual O&M	$	9,603,918
		Present Worth	$	10,496,367

Annual O&M cost shown is the present worth value of the annual O&M cost.

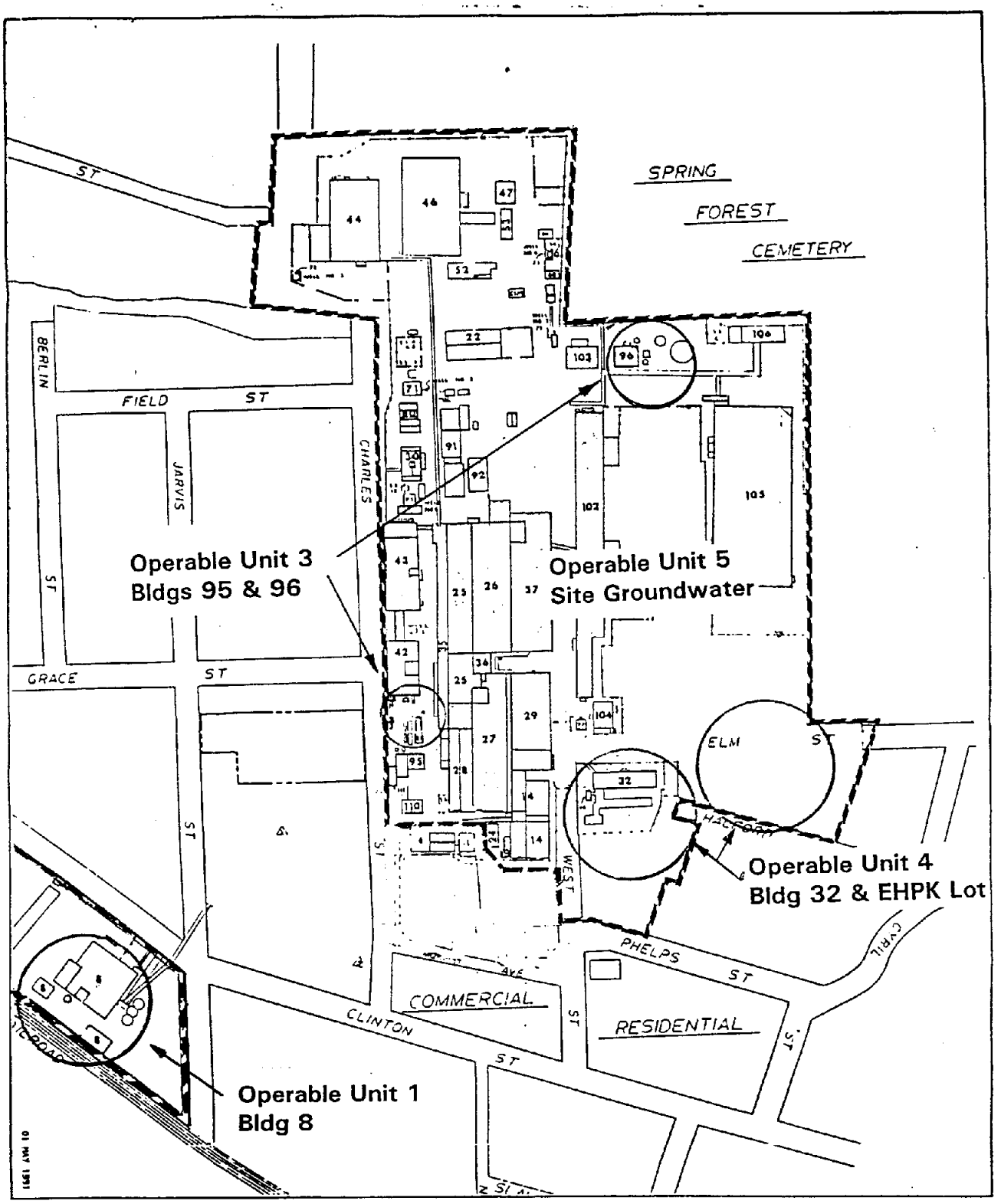


ANITEC FACILITY
BINGHAMTON, NEW YORK
SITE LOCATION PLAN

Rev. No.	Date	Type of Revision	Checked By:

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.:	Drawing No.	Date
Drawn by:	Checked by:	
Scale:		FIGURE 1



200 0 200

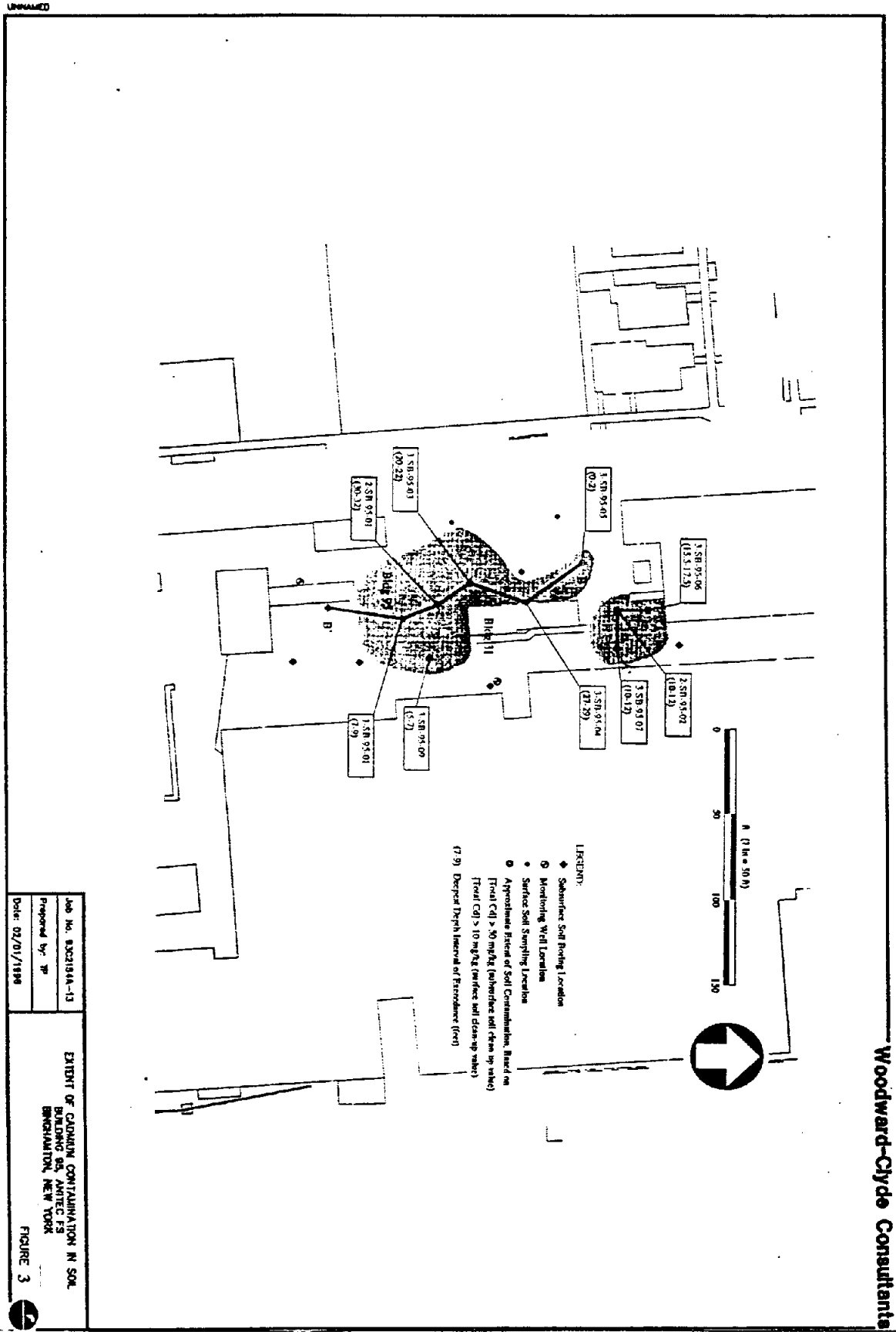
APPROX. SCALE IN FEET

LEGEND

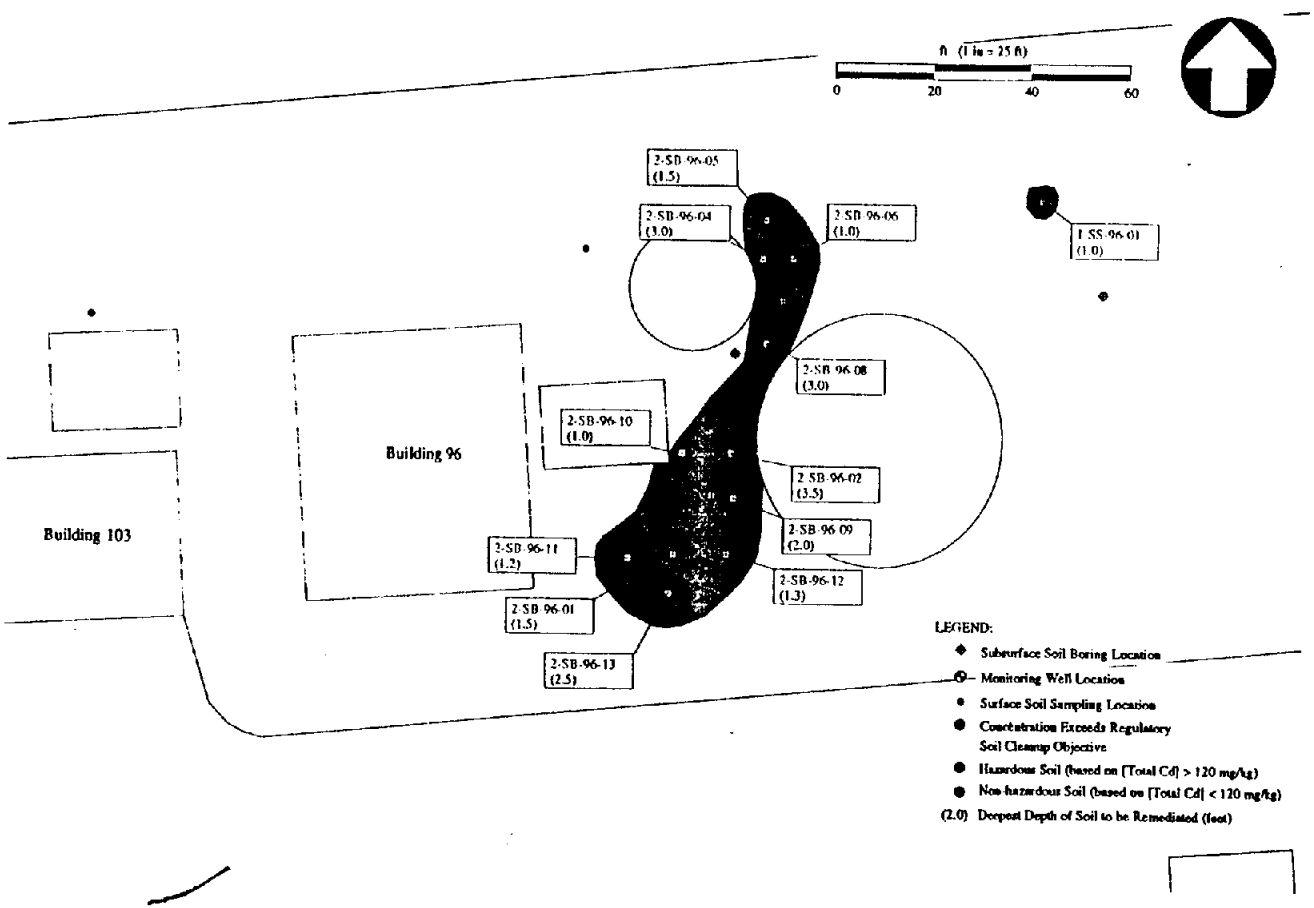
ANITEC IMAGE CORPORATION PROPERTY BOUNDARY

FIGURE 2

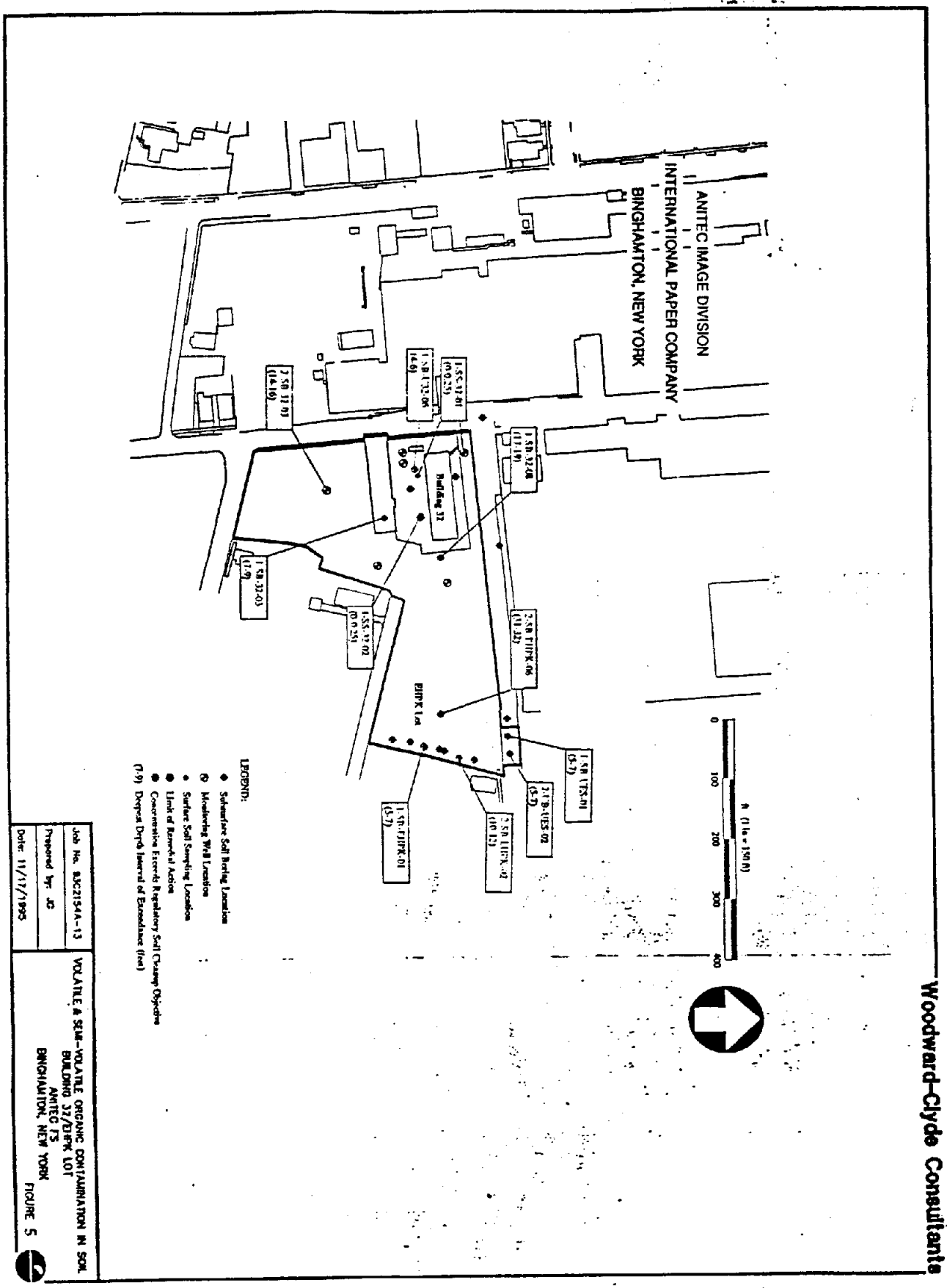
ANITEC IMAGE CORPORATION
BINGHAMTON, NEW YORK

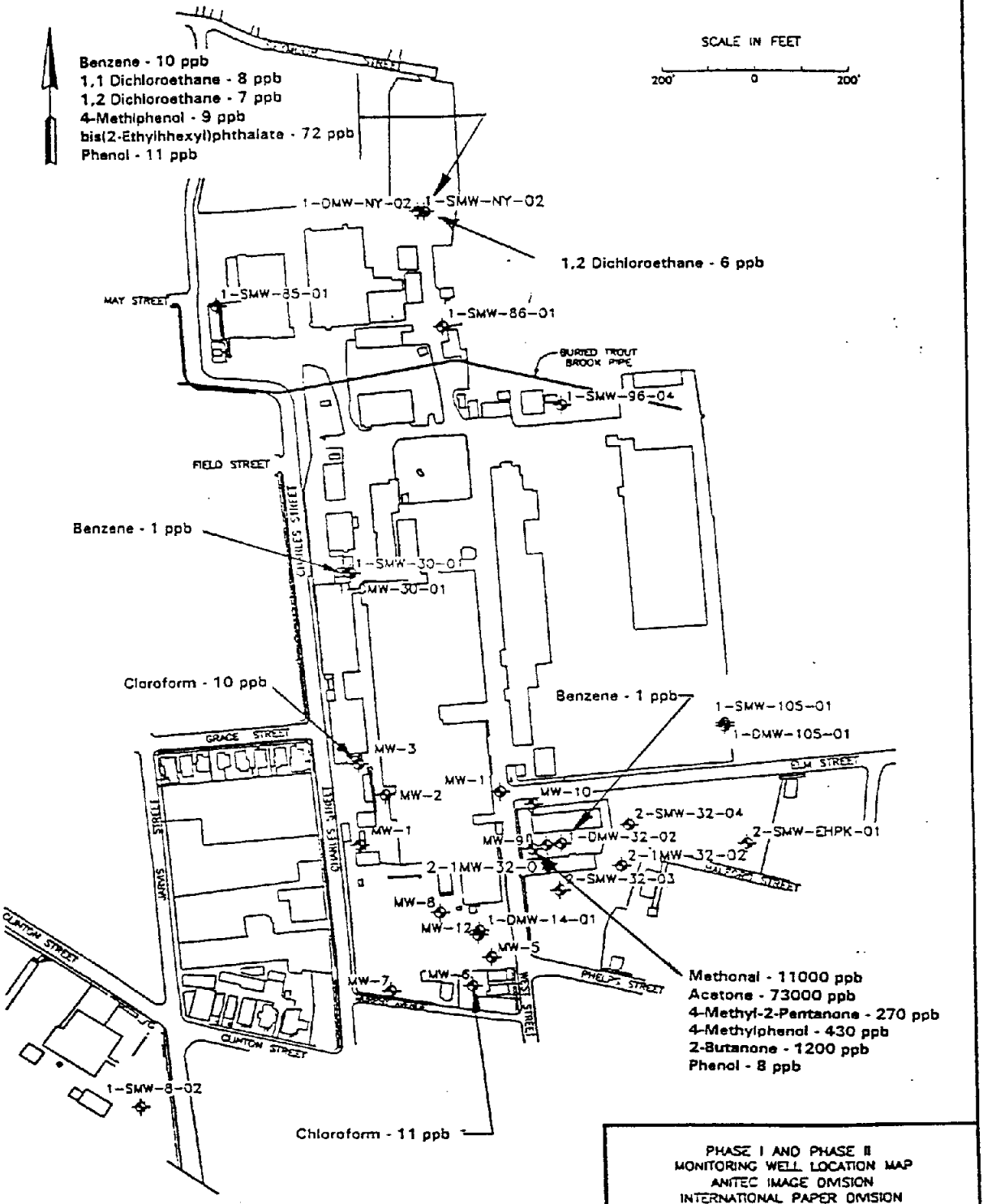

Woodward-Clyde Consultants
EXTENT OF CADMIUM CONTAMINATION IN SOIL
BUILDING 9A, ANITEC FS
BINGHAMTON, NEW YORK
FIGURE 3
Job No. 83C2104A-13
Prepared by: JP
Date: 02/01/1996
LEGEND:
Subsurface Soil Boring Location
Monitoring Well Location
Surface Soil Sampling Location
Approximate Extent of Soil Contamination, Based on
[Total Cd] > 50 mg/kg (subsurface soil clean up value)
[Total Cd] > 10 mg/kg (surface soil clean-up value)
(7-9) Deepest Depth Interval of Exceedance (feet)
1 In = 50 ft
0
50
100
150
Bldg 9A
Bldg 11
B
B'
1-SB-95-05 (0-2)
1-SB-95-06 (15.5-17.5)
2-SB-95-02 (10-12)
3-SB-95-07 (10-12)
3-SB-95-04 (27-29)
1-SB-95-09 (5-7)
1-SB-95-01 (7-9)
2-SB-95-01 (30-32)
1-SB-95-01 (20-22)

Woodward-Clyde Consultants



Job No. 93C2154A-13	LOCATION OF HAZARDOUS/NON-HAZARDOUS SOIL BUILDING 96, ANITEC FS BINGHAMTON, NEW YORK
Prepared by: TP	
Date: 12/06/1995	FIGURE 4

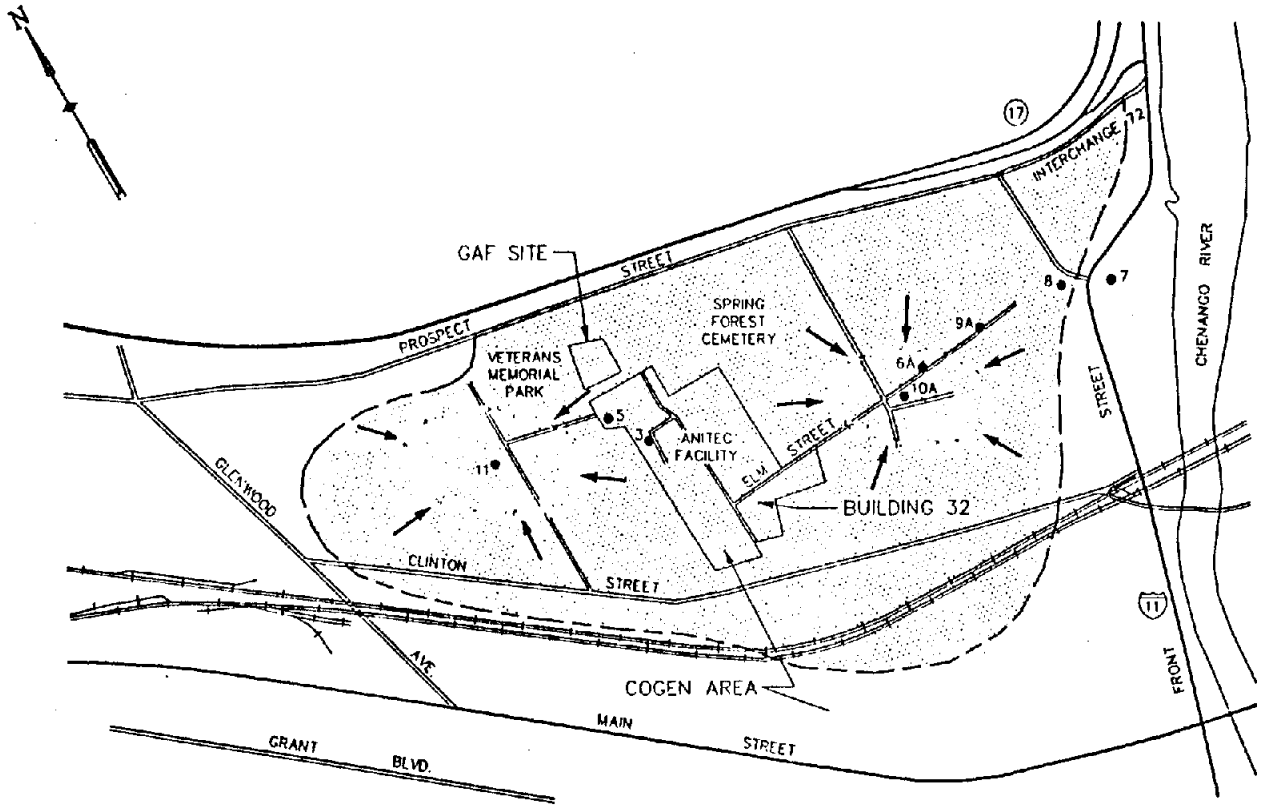

ANITEC IMAGE DIVISION
INTERNATIONAL PAPER COMPANY
BINGHAMTON, NEW YORK
Building 32
EHPK Lot
LEGEND:
Subsurface Soil Boring Location
Monitoring Well Location
Surface Soil Sampling Location
Limit of Remedial Action
Concentration Exceeds Regulatory Soil Cleanup Objective
(7.9) Deepest Depth Interval of Exceedance (feet)
0
100
200
300
400
Woodward-Clyde Consultants
VOLATILE & SEMI-VOLATILE ORGANIC CONTAMINATION IN SOIL
BUILDING 32/EHPK LOT
ANITEC FS
BINGHAMTON, NEW YORK
FIGURE 5
Job No. 83C2154A-13
Prepared by: JC
Date: 11/17/1993



PHASE I AND PHASE II
MONITORING WELL LOCATION MAP
ANITEC IMAGE DIVISION
INTERNATIONAL PAPER DIVISION
BINGHAMTON, NEW YORK

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.: 93C2154-g	Drawing No. WORK4	Date: 01/24/1996
Drawn by: TP	Checked by:	FIGURE 6
Scale:		



LEGEND:

10A● PRODUCTION WELL

— — — GROUNDWATER CAPTURE ZONE*

PARTICLE FLOW DIRECTION

SCALE: 1 INCH=1,000 FEET

1,000' 0 1,000'

ADAPTED FROM: "GROUNDWATER USE AND MANAGEMENT PLAN" IT CORPORATION, 1993.

* INFERRED FROM REGIONAL TRANSMISSIVITY DATA (RANDALL, 1986) AND COMPUTER MODELLING OF GROUNDWATER FLOW (RANDALL, 1986 AND IT CORP., 1993) WITH CONTINUOUS PUMPING FROM ANITEC PRODUCTION WELLS NO 10A AND 11

Job No. 93C2154A-9	GROUNDWATER CAPTURE ZONE FROM PRODUCTION WELL PUMPING ANITEC PHASE 2 – RI BINGHAMTON, NEW YORK
Prepared by: J.C.	
Date: 08/01/1995	

FIGURE 7

Appendix A

RESPONSIVENESS SUMMARY

Anitec Image Corporation Site
Operable Unit Nos. 1, 3, 4, & 5
Proposed Remedial Action Plan
City Of Binghamton, Broome County
Site No. 7-04-022

The Proposed Remedial Action Plan (PRAP) for the Anitec Image Site, Operable Unit (OU) Nos. 1, 3, 4, and 5, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) and issued to the local document repository on February 5,1996. This plan outlined the preferred remedy proposed for the remediation of contamination found in the former powerhouse transformer and drywell (OU #1), contaminated soil at Buildings 95 and 96 (OU #3), contaminated soil found near Building 32 and the Elm/Halford Parking Lot (OU #4), and contamination found in the groundwater located beneath the site (OU #5). The preferred remedies are as follows:

Operable Unit #1 - No further action beyond the currently ongoing Interim Remedial Measures (IRMs), for the removal of PCB contamination from concrete surfaces and an associated drywell.

Operable Unit #3 - Stabilize contaminated soil at both Buildings 95 and 96 areas and to cap the area after stabilization is completed.

Operable Unit #4 - No further action is proposed for the areas around Building 32 and the Elm/Halford Street Parking Lot.

Operable Unit #5 - Use Anitec's current groundwater pumping system to control the movement of contaminated groundwater off-site. There will be semiannual monitoring.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on February 13, 1996 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedies. The meeting provided an opportunity for the citizens to discuss their concerns, ask questions and comment on Written comments were received from Bond, Schoeneck & King, LLP, Attorneys at Law. The public

comment period for the PRAP ended on March 5, 1996.he proposed remedies. These comments have become part of the Administrative Record for this site.

This Responsiveness Summary responds to all questions and comments raised at the February 13, 1996 public meeting and to the written comments received.

The following comments were received at the public meeting with the NYSDEC's and NYSDOH's responses:

COMMENT 1: How long will hydraulic control of groundwater continue?
RESPONSE The remedial alternative selected to address groundwater contamination, hydraulic control, will continue until groundwater quality standards are met.

COMMENT 2: What will happen to the water table if the pumping (of groundwater) ceases?
RESPONSE If the pumping of the groundwater stopped, or if the pumping rate were to be reduced by 25% or more, prior to the successful remediation of the groundwater, Anitec would be required to evaluate the existing conditions and determine what would be the best remedial alternative at that time.

COMMENT 3: Where does the discharge from the cooling process "end up?"
RESPONSE The non-contact cooling water discharge flows into Trout Brook which discharges into the Chenango River.

COMMENT 4: Would a health hazard occur if there were a fractured water main in the municipal water supply?
RESPONSE No health hazard would occur if due to a fractured water main because there is positive pressure in the water main and groundwater is located far enough below the water main to prohibit groundwater from entering the water system in the event of a leak or break.

COMMENT 5: Has any thought been given to those residents who were exposed to acetate and methyl chloride over the long term (i.e. 20-30 years)?
RESPONSE The NYSDOH is in the process of doing a cancer incidence study. The NYSDOH maintains a data base of all New Yorkers diagnosed with cancer. The information for the study are drawn from this data base. The results of the study are expected within the year and will be released to the mailing list and will be placed in the document repository.

COMMENT 6: Would these historical incidences have any characteristic symptoms that can be related to long-term exposure? Specifically, have medical records been examined from the area of interest to determine adverse effects due to the pollution from this facility?
RESPONSE Some studies have suggested a link between methylene chloride and pancreatic cancer. The cancer incidence study mentioned above will include pancreatic cancer. The NYSDOH conducted a health and exposure survey that contained house hold and individual questions about possible exposure to Anitec chemicals and health status. No evidence of unusual experience of chronic disease were found in this investigation.

COMMENT 7: "I would like more information on the North Yard. It is 'near and dear to our hearts' because it is close to our park, and its is near the GAF dump site."

RESPONSE The "North Yard" located on the Anitec site was investigated as part of the remedial investigation. This area was included in the RI because drums of hazardous waste had been stored in this area. This area was found not to be contaminated and does not have to be remediated.

COMMENT 8: How effective will in-situ stabilization of cadmium around Building 95 be? What is the relationship of this procedure to the water table?

RESPONSE When properly designed and applied the in-situ stabilization (solidification) process is highly effective. It has been used successfully in similar situations at other hazardous waste sites.

COMMENT 9: Is in-situ stabilization meant to prevent water from percolating to the water table?

RESPONSE The in-situ stabilization (solidification) process will be performed to prevent the contaminants from being "flushed out" of the contaminated soils. Additionally, an asphalt cap will be designed and constructed to reduce the infiltration of surface water.

COMMENT 10: What about the future of the area around Building 95? Will there be a demarcation of the solidified mass to prevent disruption?

RESPONSE A deed restriction will be placed in Anitec's deed which will prohibit any future excavation in these areas.

COMMENT 11: If the solidified mass of cadmium is disrupted (i.e. dug, jack hammered) what will be the threat?

RESPONSE If the solidified mass of soil containing soil were to be fractured, no cadmium would be expected to leach because the cadmium will still be microscopically bound to the solidification material.

COMMENT 12: Once the material is solidified, will the grouting "hold" 100%? How will this be controlled? (Specifically: What will happen when the hydraulic control of groundwater ceases?)

RESPONSE If the solidification process is properly applied it should inhibit the leaching of the contaminants to groundwater indefinitely. The asphalt cap will also inhibit the leaching of the contaminants, therefore, hydraulic control is not necessary for this operable unit and has not been included.

COMMENT 13: "No one has mentioned the sump at Building 8."

RESPONSE The sump, or what is referred to as the "drywell" is currently being investigated as a Interim Remedial Measure (IRM) to address the PCB contamination detected in the sediments of the drywell. The IRM Drywell will determine the extent of PCB contamination and remediated the contamination identified.

COMMENT 14: Where does the catch-basin from Building 8 drain to?

RESPONSE The catch basin associated with the decommissioned transformer rooms drains into the unsaturated zone of the soil, it is not connected to either storm or sanitary sewer system.

COMMENT 15: Please clarify the differentiation between "ex-situ" stabilization versus "in-situ" stabilization in specific regard to Building 96.

RESPONSE "Ex- situ" means the contaminated soil will be removed from the ground prior to treatment. "In-situ" means the soil will be treated in place.

COMMENT 16: In regard to capping that will follow the stabilization: is the concrete to be used plain or mixed?

RESPONSE The material used for solidification will include the necessary additives to optimize the material for its intended purpose, this will be determined by testing during the design.

COMMENT 17: What is the time frame for clean-up?

RESPONSE The IRMs currently being implemented to address the contamination at Bldg. 8 (Powerhouse) are scheduled to be completed in 1996. The selected remedial alternative for Operable Unit 3, Soil Stabilization and Capping for Buildings 95 & 96, will be initiated this year and will be completed either this year or next year (1997). With regard to Operable Unit 5 (Site Groundwater), it is estimated that groundwater recovery will continue for two to three years. This estimation of time is based on the observed decline in groundwater contaminant levels since 1990. The major sources of groundwater contamination had been eliminated by 1990.

COMMENT 18: What if Anitec Image Corporation leaves Binghamton?

RESPONSE If Anitec were to leave its Binghamton facility prior to the successful completion of all of the selected remedial alternatives and IRMs, International Paper Company Would still be legally bound to complete all of the remedies and IRMs. Anitec Imaging Products is a division of International Paper Company.

COMMENT 19: What is the mobility of cadmium in groundwater?

RESPONSE The mobility of cadmium in groundwater is dependent on many factors including: the form of the cadmium dissolved in the groundwater, the physical and chemical properties of the aquifer, the pH of the groundwater, etc.

The following comments were received in a letter from Bond, Schoeneck & King, LLP, Attorneys at Law, dated March 2, 1996.

COMMENT 20: Based on a review and evaluation performed by McLaren-Hart, Environmental Engineering Corporation of the remedial alternatives for Operable Unit 3, McLaren-Hart has concluded that Alterative 5 (Capping), rather than the proposed Alternative 3 (Soil Stabilization and Capping Buildings 95 and 96), should be selected for this Operable Unit, because:

1. Alternative 5 (Capping) meets the Remedial Action Objective, that is, to prevent contamination migration to surface water via runoff and to groundwater via vertical leaching.

2. Operable Unit 3 is only one of several operable units at the Anitec facility and the remedy selected for this operable unit should take into

consideration the remedies chosen for the other operable units at the site. The remedial action selected for Operable Unit 5 (site Groundwater), hydraulic control, provides an additional measure of control as groundwater underlying the Anitec site (including Bldgs. 95 & 96) will continue to be captured by Anitec's production wells.

3. There is no technical justification to supplement capping with soil stabilization to meet the RAO and there are potential implementation problems associated with the selection of Alternative 3. There is also no regulatory requirement under either the National Contingency Plan or the New York State Superfund Program (6 NYCRR PART 375) which would require this additional work.

RESPONSE

Alternative 3 has been selected as the preferred remedial alternative based on the evaluation presented in Section 6 of this ROD. In summary Alternative 3 was selected based on the following:

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.

Alternative 5 would not meet soil SCGs since the contaminants would remain inplace and untreated. Alternative 3 would meet the soil SCGs by immobilizing the inorganics.

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

Alternative 3 would reduce the risk to site workers and the environment by immobilizing (solidifying) and capping the metals. Alternative 5 would prevent contaminant contact to site workers, the impact to the environment would remain.

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/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternative 3 & 5 would require health and safety measures to minimize risk to workers during excavation and treatment of the contaminated soil.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation . If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining

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

Alternative 3 & 5 would meet the criteria for long term effectiveness and permanence. Alternatives 3 would be more effective than 5 because the contaminated soil would be stabilized (solidified).

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

Alternative 3 would reduce the T&M of the contaminants, alternative 5 would reduce the mobility only.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Alternatives 3 & 5 would not be difficult to implement, and the technologies are readily available.

In response to the comment that Alternative 5 meets the Remedial Action Objectives (RAOs), Alternative 5 will not meet the RAOs as fully as will Alternative 3. Capping only will require continuous monitoring of the groundwater to determine its ability to meet the RAOs over time, solidification and capping will provide continuous protection of the groundwater. Alternative 5 will not result in the long-term reduction of the toxicity and mobility of contaminants in site groundwater (Operable Unit 5). It is currently anticipated that hydraulic control of groundwater, selected for OU5, will successfully reduce concentrations of contaminants. It is furthermore anticipated that the hydraulic control will cease in the near future, 3 to 5 years, based upon the progression of the reduction of contaminant concentrations that has been observed since the hydraulic control system has been in operation. Failure to remove or fully immobilize the contaminants could result in a substantial cadmium plume if Anitec's pumping of the aquifer were to cease and the indefinite continuation of groundwater recovery at the bldg 95 area. The water table at the Anitec facility is artificially lowered by Anitec's production well network. If the water table were to rebound to its natural level at some time in the future, a substantial portion of the cadmium contaminated soil that is currently in the unsaturated zone will become saturated. This could result in the formation of a large plume of cadmium if the contaminated soils are not solidified.

In response to the comment that other operable units at this site take into account that Operable Unit 5 selected remedial alternative will address groundwater impacts, effective source control is implemented when possible. Since this facility is located over a federally

designated sole source aquifer every effort is made to prevent any impact to groundwater. As described in the ROD in Section 2.2: Remedial History an estimated 200 CY of contaminated soil was removed from the Bldg. 32 tank farm just prior to the start of the RI to address a source of VOCs. Soil vapor extraction was performed in the BLDG. 14 area previous to the RI to remove high levels of VOCs from another source area. It is very likely that Anitec will be required to remove PCB contaminated soil from the drywell located at Bldg. 8 for purposes of source removal. Effective source control is consistent with what has been, and will be done at other operable units at this site.

In response to the comment that there is no technical justification and that there is no requirement under either the NCP or 6 NYCRR PART 375, the evaluation presented in Section 6 of the ROD provides technical justification and is consistent with both the NCP and 6 NYCRR PART 375.

Appendix B

Administrative Record

The following documents constitute the Administrative Record for Operable Units 1, 3, 4 & 5 of the Anitec Image Corporation site Remedial Investigation/Feasibility Study (RI/FS).

- "Remedial Investigation Report, Anitec Image Division of International Paper Company, Binghamton" dated February 1995.
- "Phase 2 Remedial Investigation Report" dated August 1995.
- "Operable Unit 3- Building 95 and 96 Feasibility Study" dated December 1995.
- "Operable Unit 4-Building 32 and EHPK Lot Feasibility Study" dated December 1995.
- "Operable Unit 5-Site Groundwater Feasibility Study" dated December 1995.
- "Remedial Investigation/Focused Feasibility Study, Anitec Image Division, Building 8, Binghamton New York" dated February 1995."
- "PROPOSED REMEDIAL ACTION PLAN, ANITEC IMAGE CORPORATION SITE, Operable Unit #1 - Building #8, Powerhouse, Operable Unit #3 - Buildings 95 & 96, Operable Unit #4 - Building 32 & Elm/Halford St. Parking Lot, Operable Unit #5 - Site Groundwater, City of Binghamton, Broome County, New York, Site No. 7-04-022, JANUARY 1996".
- Fact Sheet "Notice of Public Meeting for the Anitec Image Corporation Site" Dated February 1996.
- Listing in the New York State Registry of Inactive Hazardous Waste Sites.