Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision
Former Voplex Plant

City of Canandaigua, Ontario County
Site No. 8-35-010

March 2000

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Former Voplex Plant Inactive Hazardous Waste Site
City of Canandaigua, Ontario County, New York
Site No. 835010

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the former Voplex plant class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. 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 on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the former Voplex plant inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing 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this site have been addressed by implementing the interim remedial measures identified in this ROD, therefore the site no longer represents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of site investigations and the IRMs that have been performed at the former Voplex plant, the NYSDEC has selected No Further Remedial Action. The Department will also reclassify the site from a Class 2 to a Class 4 (site is properly closed but requires continued management) on the New York State Registry of Inactive Hazardous Waste Disposal Sites. The components of the remedy are as follows:

- Continued operation and maintenance of the groundwater recovery and treatment system together with the iron filings treatment wall is expected to contain and treat groundwater contamination on-site and gradually reduce contaminant mass;

- Continued groundwater monitoring will assess the effectiveness of the overall remedy;

- Operation and maintenance will also include paving the loading dock area and landscaping the soil berms adjacent to the loading dock in Spring 2000; and

- Deed notification will alert future property owners of the presence of soil and groundwater contamination at the site.

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 preference for remedies that reduce toxicity, mobility, or volume as a principal element.

_____ _____

Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION **PAGE**

1: Summary of the Record of Decision 1

2: Site Location and Description 2

3: Site History 2

3.1 Operational/Disposal History 2
3.2 Remedial History/Interim Remedial Measures 3

4: Site Contamination 5

4.1 Summary of Site Investigations 5
4.1.1 Site Geology and Hydrogeology 6
4.1.2 Nature of Contamination 6
4.1.3 Extent of Contamination 7
4.2 Summary of Human Exposure Pathways 11
4.3 Summary of Environmental Exposure Pathways 11

5: Enforcement Status 11

6: Summary of the Selected Remedy 12

7: Highlights of Community Participation 12

Figures:
1 Site Location Map . . . . . following page 2
2 Site Map . . . . . following page 2
3 IRM Excavation Limits . . . . . following page 3
4 Groundwater Sampling Locations/Data . . . . . following page 9

Tables:
1 Nature and Extent of Contamination 8
2 Groundwater Contaminant Concentrations in Recovery Well 9

Appendices:
A Responsiveness Summary 14
B Administrative Record 17

RECORD OF DECISION

Former Voplex Plant

City of Canandaigua, Ontario County, New York
Site No. 8-35-010
February 2000

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health, has selected this remedy for the former Voplex Plant, a class 2 inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, solvent spills and discharges of process wastes resulted in the disposal of hazardous wastes, including tetrachloroethene, trichloroethene, and barium, at the site. These disposal activities resulted in the following significant threats to the public health and/or the environment:

- a threat to human health associated with direct contact with hazardous wastes and residues in the process waste drainage system as well as the potential for direct contact and inhalation hazards during any future excavation in the loading dock area; and

- an environmental threat associated with the impacts of hazardous waste disposal to site soils, site groundwater, and sediments in a drainage ditch within the watershed of Sucker Brook and Canandaigua Lake.

During the course of the investigation, certain actions, known as Interim Remedial Measures (IRMs), were undertaken at the former Voplex Plant in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation and feasibility study. The IRMs performed at this site were:

Initial IRM (1989)

- Removal and disposal of sludge contaminated with solvents (largely tetrachloroethene, trichloroethene, and methylene chloride) and metals (barium, cadmium, and silver) from the process waste trench drain, sump, and settling tank.

Second IRM (1995-1996)

- Excavation and disposal of sediment with elevated levels of barium in the surface drainage ditch;

- Closure of the process waste drainage system (removal of contaminated solids and liquids and sealing portions of the system with concrete);

- Installation and operation of a groundwater recovery well and treatment system; and

- Installation and operation of a groundwater interceptor trench and a soil vapor extraction/treatment system.

Final IRM (1999)

- Excavation of highly-contaminated soils in the loading dock area, treatment by mechanical aeration (hammermill and power screener) to remove VOCs, and the addition of iron filings to backfilled soils to treat residual VOCs.

Based on the success of the above IRM(s), the findings of the investigation of this site indicate that the site no longer poses a significant threat to human health or the environment. Therefore, No Further Remedial Action was selected as the remedy for this site. In addition, the Department will reclassify the site to a Class 4 site on the New York State Registry of Inactive Hazardous Waste Disposal Sites. A Class 4 site is defined as a site which has been properly closed but requires continued management.

SECTION 2: SITE LOCATION AND DESCRIPTION

The former Voplex plant is a 29,000 square foot single-story manufacturing and office building located on 4.5 acres at 111 North Street in the City of Canandaigua (see Figures 1 and 2). Cambridge Industries currently owns the site and uses the building as a warehouse. The site is located in an industrial area bounded by Mobil Corporation Thin Plastics manufacturing facility to the north, the Canandaigua Wine Plant to the south, Cambridge Industries manufacturing facilities to the west, and Sonoco, a manufacturer of paper tubes and polyethylene bags, to the east.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

In 1973, the building was constructed by a private developer and leased to North American Phillips Corporation (NAPC). From 1973 to 1981, NAPC produced electronic components at the site and reportedly discharged equipment washdown and other wastes to a process waste drainage system. In 1981, the site was subleased to Voplex Corporation (Voplex) and the building was used as a warehouse, for production of Nerf® cars, and for manufacture of automobile bumper trim and fiberboard panels. From 1981 to 1989, Voplex discharged pretreated wastewater from a caustic paint stripping process to the process waste drainage system. Voplex purchased the property from the private developer in 1990 and subsequently filed bankruptcy. The building was purchased by Cambridge Industries, Inc. in 1994.

Process waste discharges and solvent spills evidently impacted two areas in the eastern portion of the site: the former process waste drainage system, and the former chemical storage room/loading dock area.

The former process waste drainage system consisted of a trench drain and sump in the northeast corner of the building which drained to an exterior 1000-gallon underground settling tank and, via buried pipe and catch basins, daylighted to a surface drainage ditch along the eastern boundary of the site (see Figures 2 and 3). Volatile organic compounds (VOCs) and metals (primarily barium) were found in parts of the system.

The former chemical storage room/loading dock area is located on the east side of the building as shown on Figure 3. A floor drain in the former chemical storage room exited the building at the loading dock and the associated PVC drain pipe (a "scupper" drain) reportedly disintegrated within the concrete block wall presumably from reaction with solvents. Substantial levels of VOCs, primarily tetrachloroethene and trichloroethene including free product, were found near the building foundation in this area.

3.2: Remedial History/Interim Remedial Measures

A series of environmental investigations, beginning with an environmental audit in 1988, revealed the two areas of contamination at the site: the former process waste drainage system and the former chemical storage room/loading dock area. Sampling of the process waste drainage system showed high levels of VOCs and metals (principally barium) in parts of the system. Based on this data, Voplex removed and disposed of hazardous waste sludge present in the trench drain, sump, and settling tank in August 1989. This initial IRM was successful in mitigating the threat of direct exposure to hazardous waste.

In 1991, Voplex performed a phase II investigation with NYSDEC oversight. Elevated levels of VOCs, primarily tetrachloroethene (PCE), trichloroethene (TCE), and dichloroethene (DCE), were found in subsurface soils and groundwater in the loading dock area and metals, principally barium, were found in drainage ditch sediments. Based on this information, NYSDEC added the site to its list of inactive hazardous waste disposal sites as a class 2 site in 1992. A classification of 2 means that the site poses a significant threat to public health and/or the environment and that remedial action is required.

In July 1994, an IRM Order on Consent and associated work plan were finalized. An investigation and implementation of the second IRM ensued in 1995 through 1996 which included:

October 1995 - Excavation and disposal of sediment/soil with elevated levels of barium in the surface drainage ditch;

November 1995 - Closure of former process waste drainage system: removal of contaminated solids and liquids from the underground 1,000 gallon settling tank, catch basins, and piping followed by pressure washing and filling/sealing the system with concrete;

December 1995 - Installation and operation of a groundwater recovery well in the loading dock area; recovered groundwater is treated with granular activated carbon and discharged to the publicly owned treatment works (POTW) facility; and

December 1996 - Installation and operation of a groundwater interceptor trench to collect contaminated groundwater and installation and operation of a soil vapor extraction/treatment system to remove and treat VOC contamination in unsaturated soils inside the building.

For the most part, this IRM proved successful. With the closure of the process waste drainage system, including excavation of contaminated sediment from the surface drainage ditch, the environmental threat associated with transport of contaminated sediment and fluids was mitigated. With installation of the groundwater recovery/containment (well and interceptor trench) and treatment system, the environmental threat associated with migration and potential discharge of contaminated groundwater to surface water was mitigated. In addition to containment, the groundwater recovery system is also gradually removing VOC mass.

The soil vapor extraction (SVE) component of the IRM to remediate the source area was less successful. The SVE system showed significant initial VOC extraction rates, but the mass removed declined rapidly with time. Less than ideal conditions (high water table and low-permeability soils) contributed to poor system performance; but the primary factor was the presence of dense non-aqueous phase liquids (DNAPL) below the water table where SVE is ineffective. Persistent and significant levels of VOCs dissolved in groundwater (e.g., up to 89 ppm of TCE and up to 43 ppm of PCE) in the loading dock area indicated that the bulk of the VOC source (residual and pooled DNAPL) was below the water table. The presence of DNAPL was confirmed in 1998 by interior sub-slab soil sampling which discovered an accumulation of pooled DNAPL on a clay layer about 10 feet below the slab as well as residual DNAPL above the clay layer.

To address the saturated zone DNAPL (very long-term source of contamination; see Section 4.1.2 below), Cambridge elected to implement a third IRM in order to help shorten the overall time required for remediation and to mitigate the potential health threat associated with any future subsurface work in this area. Shortly after the discovery of pooled DNAPL, a stainless-steel well was installed and periodical/ly pumped for DNAPL recovery. Approximately 40 gallons of DNAPL and highly contaminated groundwater were recovered between January 1999 and June 1999. In concert with this effort, an IRM work plan was developed and approved to excavate and treat the source area soils. The third IRM, implemented in August and September 1999, is described below.

Source area soils were excavated from under and near the former chemical storage room inside the building and from the exterior loading dock area (Figure 3). VOC-contaminated soils (about1600 cubic yards) were treated with a mechanical volatilization system consisting of a hammermill and power screen. Treated soils were backfilled after sampling results proved that soil cleanup objectives had been met. Highly-contaminated soils showing evidence of residual DNAPL were segregated in two roll-off containers (about 50 cubic yards) and disposed off-site. In addition, free DNAPL (seeps and small scattered pools) in the bottom of the excavation was removed with absorbent pads and containerized for off-site disposal.

To address residual contamination which remained after excavation (such as adjacent to and below building footers), iron filings were added to the backfilled soils (5% iron by weight) along the exterior building foundation to form a VOC treatment wall (a.k.a., permeable reactive barrier) approximately 60 feet long, 20 feet wide and 5 feet deep. Iron filings (iron metal particles with high

surface area) react with chlorinated contaminants dissolved in groundwater, essentially destroying the contaminants in place.

Three additional monitoring wells were installed and sampled downgradient of the treated area in December 1999. Groundwater quality showed significant improvement (as discussed below in Section 4.1.3 and shown in Table 2) and periodic sampling of the groundwater monitoring network will assess the effectiveness of the overall remedy over time. Finally, ongoing operation of the groundwater recovery and treatment systems installed during the second IRM (groundwater recovery well, RW-1, and the groundwater interceptor trench) will continue as part of the remedy.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate alternatives to address the significant threat to human health and/or the environment posed by the presence of hazardous waste, the PRP conducted a series of investigations.

4.1: Summary of the Site Investigations

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

The investigations were conducted in several phases with significant work occurring in 1991, 1994, 1996, 1998, and 1999. Reports entitled, “Phase II Environmental Investigation, November 1991”; “IRM Testing Report, February 1995"; various Quarterly IRM Reports ; “Focused Feasibility Study, July 1997"; “IRM Summary Report, February 2000" have been prepared which describe the field activities and findings in detail.

The investigations included the following activities:

- *Collection and analysis of waste and sludge samples;*
- *Collection and analysis of surface drainage sediments/soils;*
- *Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions; and*
- *Periodic sampling of groundwater monitoring wells.*

To determine which media (soil, groundwater, sediment) are contaminated at levels of concern, the analytical data were compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the former Voplex Plant site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. In addition, for soils, site specific background concentration levels can be considered for certain classes of contaminants. Guidance values for

evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments".

Based on investigation results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized below. More complete information can be found in the various investigation reports.

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

4.1.1: Site Geology and Hydrogeology

A typical soil profile at the site consists of:

- an uppermost silt layer (0-10 feet);
- an intermediate clay layer with interbedded silt (10-20 feet); and
- a deep (> 20 feet) sand and gravel layer.

The depth to the clay layer varies from roughly 8 to 12 feet. The low permeability of this unit appears to have restricted contamination to the uppermost silt layer; DNAPL was found pooled on top of this unit and the deeper monitoring wells (> 20 feet) have not shown contamination. Bedrock was not encountered in site borings.

Shallow groundwater generally occurs within 5 feet of the surface and flows in a southeast to south direction at a velocity on the order of 10 feet/year. No groundwater users are known in the vicinity of the site; public water is available throughout the City of Canandaigua.

4.1.2: Nature of Contamination

As described in the site investigation reports and depicted in Table 1, numerous soil, groundwater and sediment samples were collected at the site to characterize the nature and extent of contamination. The categories of contaminants which exceed their SCGs are inorganics (metals) and volatile organic compounds (VOCs). The main contaminants of concern are barium (a metal) and the VOCs, tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), vinyl chloride (VC), and trichloroethane (TCA). Other VOCs, such as, methylene chloride, 2-butanone (a.k.a: methyl ethyl ketone), and acetone, have been detected in wastes (trench drain sludge) and source area soils, but are not as prevalent in groundwater.

In relatively pure form, chlorinated solvents, such as PCE and TCE, are known as dense non-aqueous phase liquids (DNAPL) because such liquids are heavier than water and not very soluble. The physical properties of DNAPL, such as high density, low viscosity, and low solubility, give rise to complex and very persistent groundwater contamination problems. With a significant spill/release, DNAPL sinks quite rapidly through both the unsaturated and saturated zones due to its high density and low viscosity (e.g., TCE infiltrates roughly 4 times faster than water). In the subsurface, DNAPL may distribute itself as both residual saturation, in the form of immobile globules at equilibrium, and as larger accumulations of free product, such as lenses or pools, above capillary barriers such as clay

layers. Such accumulations of DNAPL present very long-term sources of dissolved (aqueous phase) groundwater contamination.

At the former Voplex plant site, persistent and significant levels of VOCs (e.g., TCE - up to 89 ppm and PCE - up to 43 ppm in RW-1) dissolved in groundwater indicated the presence of DNAPL in subsurface soils at the loading dock area. Its presence was confirmed in 1998 with the discovery of pooled DNAPL on top of a clay layer about 10 feet below the slab as well as residual DNAPL above the clay layer. The removal of DNAPL (accomplished first by pumping free product and then by soil excavation/treatment) during the final IRM should greatly reduce the persistence of groundwater contamination and hence, the remediation timeframe. The addition of iron filings to backfilled soils in the loading dock area will help treat remaining non-aqueous and aqueous phase liquids, as will continued operation of the groundwater recovery and treatment systems. Lastly, both chlorinated and non-chlorinated solvents are amenable to biodegradation under certain conditions. The presence of the breakdown chain of chlorinated ethenes: (tetrachloroethene - trichloroethene - dichloroethene - vinyl chloride) indicates that these contaminants are biodegrading. Biodegradation along with other natural attenuation processes, such as sorption, will assist in the treatment and containment of low-level groundwater contamination.

4.1.3: Extent of Contamination

Table 1 summarizes the nature and extent of contamination for the contaminants of concern in groundwater, soil, and sediments and compares the data with the SCGs for the site. A discussion of investigation results for each medium follows Table 1.

Table 1

Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)*	FREQUENCY of SAMPLES EXCEEDING SCGs***	SCGs (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Trichloroethene	ND** to 89,000	14 of 104	5
		Tetrachloroethene	ND to 43,000	10 of 104	5
		1,2-dichloroethene	ND to 24,000	28 of 104	5
		1,1,1-trichloroethane	ND to 49,000	9 of 104	5
		Toluene	ND to 11,000	9 of 104	5
Soils/ Sediment	VOCs	Trichloroethene	ND to 37,100	27 of 120	70
		Tetrachloroethene	ND to 190,000	40 of 120	140
		1,2-dichloroethene	ND to 6,200	47 of 120	30
		1,1,1-trichloroethane	ND to 16,100	13 of 120	80
		Toluene	ND to 1,400	14 of 120	150
Sediment	Metals	Barium	164,000 to 22,100,000	4 of 6	300000
		Silver	ND to 34,000	2 of 6	1,000
		Cadmium	ND to 500	0 of 6	600

* ppb = parts per billion
** ND = Not Detected
*** SCGs = Standards, Criteria, and Guidance Values

The following are the media which were investigated and a summary of the findings of the investigation.

Groundwater

Significant levels of dissolved VOCs have been detected in groundwater at the loading dock area (Recovery Well, RW-1: PCE - up to 43 ppm; TCE - up to 89 ppm; see Figure 4 for location). Some 80 feet downgradient of the source area at monitoring well, MW-7S, the predominant contaminant was DCE (up to 24 ppm) indicating biodegradation of parent compounds, TCE and PCE, during groundwater contaminant migration from the source area. In the post-IRM sampling round of December 1999, RW-1 showed significant decreases in contaminant concentrations (see Table 2 below). Likewise, MW-7S was removed during excavation and the area was backfilled with iron filings; the nearest well (recently installed MW-14) shows relatively minor concentrations of VOCs (no DCE detected with up to 57 ppb of acetone).

TABLE 2: Groundwater Contaminant Concentrations (ppb) in the Recovery Well (RW-1)

Date Sampled	TCE	PCE	TCA	DCE
10/30/96	55,000	26,000	23,000	25,000
6/13/97	89,000	43,000	49,000	47,000
1/14/99	36,000	26,000	24,000	39,260
12/7/99 (post-IRM)	3,733	847	2,606	2,091

Groundwater contamination currently appears restricted to on-site areas; data from off-site monitoring wells, MW-8 and MW-11, to the east and from downgradient on-site well, ESI-4, have not shown contamination. However, a sampling round in December 1999 detected DCE (8.9 ppb) in on-site monitoring well MW-10 which is located downgradient of the interceptor trench (see Figure 4). It appears likely that the downgradient edge of the VOC contaminant plume migrated to this area prior to the installation of the interceptor trench in December 1996. Given the hydrogeologic conditions (low groundwater velocity and silty/clayey soils) at the site, natural attenuation processes, such as biodegradation and sorption, are expected to mitigate any low-level contaminants beyond the influence of the groundwater interceptor trench. Contaminant trends in the effluent of the groundwater interceptor trench showed moderate increases during the December 1999 sampling round. These changes may be attributable to source disturbance, low groundwater levels, and shutdown of the interceptor trench for two months during source soil excavation (the groundwater treatment system had to be dismantled prior to excavation and then relocated to the northeast corner of the building after backfilling the excavation with concrete). Ongoing groundwater monitoring will assess groundwater quality and containment in this area.

Soil

As discussed above, spillage of solvents in the former chemical storage room evidently resulted in solvent releases and significant soil contamination in the loading dock area. A floor drain in the former chemical storage room reportedly exited the building at the loading dock as a scupper drain (a PVC pipe which discharged solvents directly onto the ground). The PVC pipe eventually disintegrated within the concrete block wall (presumably from reaction with solvents) releasing solvents (DNAPL) along and within the concrete block foundation of the building.

Data indicated that soil contamination was not extensive, limited to an approximate 40- foot radius about the scupper drain release point at the loading dock. Vertically, the clay layer at 10-12 feet appears to have impeded DNAPL migration protecting the deeper sand aquifer. Substantial levels of VOCs, primarily tetrachloroethene and trichloroethene, including residual and pooled DNAPL, were found near the building foundation in this area.

As discussed above in Section 3.2, pooled DNAPL was pumped and residual DNAPL was removed to the extent practicable as part of the final IRM. Figure 3 shows the two areas of contaminated soils excavated during the final IRM. A number of confirmatory soil sample locations in the excavations did not meet soil cleanup objectives. Near the building foundation, some residual contamination could not be excavated due to structure instability and in other areas of the excavation, contaminants dissolved in groundwater (e.g., DCE, a breakdown product of PCE/TCE) account for a large proportion of saturated soil contamination. The iron filings treatment wall and the interceptor trench are expected to treat/contain such residual contamination. Confirmatory data collected during the soil treatment (mechanical aeration) process indicate that all treated/backfilled soils met site cleanup objectives.

Sediments

A surface drainage ditch, into which the former process waste drainage system emptied and which also carries stormwater runoff, drains generally southward along the eastern property boundary (see Figures 2 and 3). Elevated levels of metal contaminants (barium; up to 22,100 ppm and silver; up to 34 ppm) were detected in sediment/soil within the first 100 feet of the surface drainage ditch in 1995. VOCs totaled up to 224 ppb in the same stretch of ditch. Based on these data, the first 100 feet of ditch were excavated to a depth of 2 feet and replaced by crushed stone in October 1995. Additional sediment and surface water sampling was conducted recently at several points along this ditch, at its junction with Sucker Brook, and downstream in Sucker Brook. Metal and VOC sampling results show no impact to this drainage system/watershed.

Waste Materials

During the first IRM in 1989, sludges/wastes were removed from the process waste drainage system and disposed off-site as hazardous wastes. Barium and cadmium exceeded E.P. toxicity limits and VOC concentrations totaled over 25,000 ppm (primarily TCE, methylene chloride, PCE, acetone, and 2-butanone). Also, as noted previously, data indicate that a variety of solvents were released

through the scupper drain to soils in the former chemical storage/loading dock area resulting in soil and groundwater contamination.

4.2: 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.

An exposure pathway is the manner by which an individual may come in 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.

Pathways which did exist at the site included:

- direct contact with hazardous wastes and residues in the process waste drainage system;
- direct contact and inhalation hazards during any future excavations in the loading dock area; and
- direct contact or ingestion of contaminated sediments in the drainage ditch.

The IRMs eliminated the primary source of known contamination and the point of exposure of these exposure pathways. The deed notification would mitigate exposure pathways associated with any residual contamination and future excavations in the loading dock area.

4.3: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. The following pathways for environmental exposure and/or ecological risks have been identified:

- the environmental threat associated with the impacts of hazardous waste disposal on site soils, site groundwater, and sediments in a drainage ditch within the watershed of Sucker Brook and Canandaigua Lake.

This environmental threat has been mitigated by the IRMs already implemented. Contaminated soils have been treated to the extent practicable, groundwater is being contained and treated on-site, and recent sediment/surface water sampling results show no impact to the on-site drainage ditch or the Sucker Brook watershed.

SECTION 5: ENFORCEMENT STATUS

The NYSDEC and the Voplex Corporation (and by succession, Cambridge Industries, Inc.) entered into a Consent Order on July 25, 1994. The Order obligated the responsible parties to implement an IRM program.

The following is the chronological enforcement history of this site.

Date	Index No.	Subject of Order
4/11/91	B8-0279-89-06	Phase II Site Investigation
7/25/94	B8-0279-89-06	IRM

SECTION 6: SUMMARY OF THE SELECTED REMEDY

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at the site. The State believes that the remedy now in place will accomplish this objective provided that it continues to be operated and maintained in a manner consistent with the design. The continued operation and maintenance of the groundwater recovery (well and trench) and treatment (carbon and discharge to POTW) system together with the iron filings treatment wall is expected to contain and treat groundwater contamination on-site and gradually reduce contaminant mass. Continued groundwater monitoring will allow the effectiveness of the remedy to be assessed and will be a component of site operation and maintenance. The groundwater monitoring network will consist of RW-1, Interceptor Trench, MW-3S, ESI-4, MW-7D, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-14. Another component of operation and maintenance will be paving of the loading dock area and landscaping of the soil berms adjacent to the loading dock in Spring 2000. Lastly, a deed notification will be instituted to alert future owners of the presence of soil and groundwater contamination at the site.

Based on the results of the investigations and the IRMs that have been performed at the site, the NYSDEC has selected No Further Remedial Action with continued operation of the groundwater recovery/treatment system as the remedy for the site. The Department will also reclassify the site from a Class 2 to a Class 4 (site is properly closed but requires continued management) on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation 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;

- Fact sheet (IRM description) was sent to the site mailing list in November 1995;
- Fact sheet (IRM description) was sent to the site mailing list in July 1999;
- Fact sheet (PRAP availability and public meeting announcement) was sent to the site mailing list in February 2000;
- On March 9, 2000, a public meeting was held to present the PRAP and receive public input; and
- In March 2000, a Responsiveness Summary was prepared and made available to the public (see Appendix A below) to address the comments received during the public comment period for the PRAP. The comments received do not affect the proposed remedy.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former Voplex Plant
Proposed Remedial Action Plan
City of Canandaigua, Ontario County
Site No. 835010

The Proposed Remedial Action Plan (PRAP) for the former Voplex plant was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on February 28, 2000. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated groundwater, soil, and sediment at the former Voplex plant. The preferred remedy is No Further Remedial Action with continued operation of the groundwater recovery/treatment system. The Department will also reclassify the site from a Class 2 to a Class 4 (site is properly closed but requires continued management) on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

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

On March 9, 2000, a public meeting was held at the Wood Library in the City of Canandaigua to discuss the Proposed Remedial Action Plan. The meeting included a presentation of the site investigations and IRMs completed as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 29, 2000.

This Responsiveness Summary responds to all questions and comments raised at the March 9, 2000 public meeting. Six questions were asked. None of the questions affect the selected remedy. The questions generally asked for clarification on past activities. No written comments were received.

The following are the comments received at the public meeting, with the NYSDEC's responses:

COMMENT 1: How much did all the cleanup activities cost?

RESPONSE 1: Cambridge paid for the cleanup but did not share their costs with DEC. I would estimate Cambridge spent at least several hundred thousand dollars. Cambridge also reimbursed the State for its costs.

COMMENT 2: Regarding the soil that was excavated and treated, where did the soil processing (i.e. hammermill operations) take place?

RESPONSE 2: The processing took place on the site in a lot south of the building.

COMMENT 3: Was any sampling done in Sucker Brook? What did you test for? Can I get a copy of the data from the sampling?

RESPONSE 3: Yes, sampling was done in Sucker Brook for the site-related contaminants: volatile organic compounds and metals. In summary, all metals detected were found at relatively low concentrations. For example, cadmium results were all below 1 part per million (ppm). Sucker Brook contained lower levels of metals than the ditch leading from the plant to the Brook. Acetone was detected in samples taken very close to the plant. However, follow-up sampling did not detect acetone indicating that the previous results were likely a laboratory error. (A copy of these results have already been forwarded as requested.)

COMMENT 4: Who discovered this problem initially?

RESPONSE 4: There was an environmental audit in 1988 at the plant site, presumably as part of a real estate transaction, that was performed by Voplex. Based upon information available to the DEC, this was when contamination was initially discovered. Additional investigations and remediation were performed by Cambridge Industries, Inc. who purchased the plant in 1994.

COMMENT 5: How long will the monitoring wells stay in the ground?

RESPONSE 5: DEC will negotiate another legal agreement with Cambridge Industries for long-term monitoring. Often these agreements include having the monitoring wells remain for at least 30 years. I would estimate at least 10 years for this site. The timeframe for monitoring at this site may be shorter because testing of two wells located downgradient from the site has not detected contamination.

COMMENT 6: How deep is the groundwater collection trench?

RESPONSE 6: The maximum depth of the groundwater collection trench is approximately 12 feet?

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

Former Voplex Plant
City of Canandaigua, Ontario County
Site No. 835010

March 1990 - Phase II Investigation Work Plan

March 1991 - Phase II Investigation Report

January 1994 - IRM Work Plan

February 1995 - IRM Report

1995 - 1999 - Various Quarterly IRM Progress Reports and Related Correspondence

July 1997 - Focussed Feasibility Study

July 1998 - IRM Work Plan

January 2000 - Post-IRM Groundwater Sampling Report

February 2000 - IRM Summary Report