Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Arkwin Industries Site
Westbury (V), North Hempstead (T)
New Cassel Industrial Area
Nassau County, New York
Site Number 1-30-043D
Operable Unit 01 - Soil

January 1998

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

DECLARATION STATEMENT - RECORD OF DECISION

Arkwin Industries, Inactive Hazardous Waste Disposal Site
Westbury (V), North Hempstead(T), Nassau County, New York
Site No. 1-30-043D
Operable Unit 01 - Soil

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for Operable Unit 01 of the Arkwin Industries 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 Arkwin Industries Inactive Hazardous Waste Site and upon public input to the November 1997 Proposed Remedial Action Plan (PRAP) presented to the public by the NYSDEC on December 4, 1997. 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

The Operable Unit 01 - Soil portion of the Arkwin Industries inactive hazardous waste disposal site does not present a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Focussed Remedial Investigation/Feasibility Study (RI/FS) for the Arkwin Industries Site and the criteria identified for evaluation of alternatives, the NYSDEC has determined that No Further Action is necessary at this site regarding the on-site soils. Because of the presence of the contaminated groundwater beneath the site, which may have originated at the site, institutional controls will be implemented and deed restrictions will be recorded in the chain of title restricting the future use of the groundwater at the site. However, the contaminated groundwater will be addressed in a separate operable unit.

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, is designed to comply 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 the toxicity, mobility, or volume of the wastes.

2/1/98
Date

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

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New Cassel Industrial Area, Nassau County, New York
Site No. 1-30-043D
Operable Unit 01 - Soil

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SECTION 1: SITE LOCATION AND DESCRIPTION

The site is located at 648, 656, 662 and 670 Main Street and 66 Brooklyn Avenue in the New Cassel Industrial Area (NCIA), in the Village of Westbury, Town of North Hempstead, Nassau County, New York. Please refer to Figures 1, 1A and 2. This property is approximately four acres and is occupied by five separate buildings. There are 8 drywells located throughout the properties. Please refer to Figure 3. The buildings were connected to the Nassau county sewer system since 1980.

The on site source contamination that would be addressed by this remedial action plan has been designated as Operable Unit 01, and the groundwater contamination associated with this site has been designated as Operable Unit 02. This subdivision of the site contamination was done to expedite the remediation of the identified on site soils contaminated with volatile organic compounds. 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 the site. By remediating the on site soils and associated source contamination at this site as a separate unit, the source of the groundwater contamination can be expedited and the overall time it would take to remediate the site in its entirety can be shortened.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Arkwin began operations in the NCIA in 1955 and now occupies several buildings in the industrial park. These buildings are used by the present occupant, Arkwin Industries for the production of parts for the defense and aerospace industries and as warehouse and office space. Arkwin receives metal stock which is then machined, fabricated, degreased, polished, painted and assembled into finished products. Arkwin used 1,1,1 - trichloroethane (TCA), perchloroethane (PCE), and other solvents in their production process.

2.2: Remedial History

In 1988, the entire New Cassel Industrial Area was listed in the New York State Registry of Inactive Hazardous Waste Disposal Sites (the Registry) as a Class 2 site due to the presence of high levels of volatile organic compounds (VOCs) in the groundwater. The Class 2 classification indicates that the site poses a significant threat to the public health or the environment and action to remediate the site is required.

In February, 1995, a Site Investigation Report for the New Cassel Industrial Area was completed by Lawler, Matusky and Skelly Engineers under the New York State Superfund program. Based on this report, in March 1995, the majority of the New Cassel Industrial Area was removed from the Registry. At that time, the Arkwin Industries site was one of several properties listed as an individual Class 2 site on

the Registry. This Site Investigation Report is available for review at the document repositories.

In March. 1995, Arkwin performed soil investigations at drywells DW1, DW2, DW3, DWX4, DWX5, DW6, DWX8 and DWX9. Please refer to Figure 3. Sediments were removed from drywells DW1, DW2 and DW3 with a Vactor Truck. The endpoint samples collected and analyzed indicate that hazardous constituents remaining in the soil are below Standards, Criteria, and Guidelines (SCGs).

DWX4 was sampled and found to contain no concentrations of VOCs above the method detection limits. Drywell DWX5 is the overflow drywell for DWX4. As DWX5 was abandoned at the same time in the same fashion as DWX4 and was the overflow for DWX4, it is assumed that this drywell was not exposed to any VOCs and therefore was not sampled.

Sediments were removed from drywell DW6 with a Vactor Truck. Endpoint sampling indicated that hazardous constituents remaining in the soil were below Standards, Criteria, and Guidelines (SCGs).

The drywells at the site were designated based on a numbering scheme. The designation DW7 was skipped and, therefore, a drywell DW7 never existed. There is no practical difference between those drywells designated with the prefix 'DW' or 'DWX'.

Drywell DWX8 had samples collected using a Geoprobe. This data indicated high levels of VOCs at DWX8 and required additional investigation to determine horizontal and vertical extent of contamination.

Drywell DWX9 had samples collected using a Geoprobe. However the Geoprobe was unable to collect a sample due to the presence of large subsurface obstructions. This required reinvestigation to determine horizontal and vertical extent of contamination.

SECTION 3: CURRENT STATUS

In July 1996, Arkwin Industries submitted a Focused Remedial Investigation/Feasibility Study and Interim Remedial Measure work plan for the site. Fieldwork was carried out with the oversight of the NYSDEC beginning in August 1996 and was completed in December 1996. The Focussed Feasibility Study and Interim Remedial Measure Work Plan was completed June 1997. The Interim Remedial Measure began on June 17, 1997 and was completed on June 18, 1997. The Interim Remedial Measures/Final Engineering Report which included the final Focussed Remedial Investigation/Feasibility Study report was submitted in August 1997. These reports are available for review at the document repositories. These reports describe the field activities and findings of the Remedial Investigation in detail.

3.1: Summary of the Remedial Investigation

The purpose of the Focussed Remedial Investigation was to identify and delineate any soil and groundwater contamination resulting from previous activities at the site. The Remedial Investigation began in August 1996 and was completed in December 1996.

The Remedial Investigation activities included the following:

- *A search of local agency and state files for information on past activities and construction at the site to identify and locate drywells and other likely areas of contamination.*
- *The collection of 11 subsurface soil samples from 3 boring locations inside and adjacent to drywell DW1 using a Geoprobe to determine potential contaminant source locations.*
- *The collection of 7 subsurface soil samples from 2 boring locations inside and adjacent to drywell DW2 using a Geoprobe to determine potential contaminant source locations.*

- *The collection of 17 subsurface soil samples from 4 boring locations inside and adjacent to drywell DW3 using a Geoprobe to determine potential contaminant source locations.*

- *The collection of 23 subsurface soil samples from 8 boring locations inside and adjacent to drywell DW6 using a Geoprobe to determine potential contaminant source locations.*

- *The collection of 29 subsurface soil samples from 5 boring locations inside and adjacent to drywell DWX8 using a Geoprobe to determine potential contaminant source locations.*

- *The collection of 39 subsurface soil samples from 9 boring locations inside and adjacent to drywell DWX9 using a Geoprobe to determine potential contaminant source locations.*

- *The collection of 3 groundwater samples from existing shallow groundwater monitoring wells MW1, MW2 and MW6 up-gradient of the source.*

- *The collection of 2 groundwater samples from existing shallow groundwater monitoring wells MW4 and MW7 near potential source areas.*

- *The collection of 1 groundwater sample from an existing shallow groundwater monitoring well NC24 down-gradient of the source.*

The analytical data obtained from the Focussed Remedial Investigation was compared to applicable Standards, Criteria, and Guidelines (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Arkwin Industries, Inc site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. NYSDEC TAGM 4046 soil cleanup guidelines for the protection of groundwater, background conditions and risk-based remediation criteria were used as SCGs for soil.

The analytical results from the soil samples collected indicated contamination above SCGs for soils in drywell DWX8. The analytical results for the other drywell soil samples indicated contamination below SCGs for soils. The results of the soil samples for DWX8 are summarized in Table 2. The results of the groundwater samples are summarized in Table 1.

3.1.1: Nature of Contamination

The results of the Focussed Remedial Investigation when combined with the earlier investigations performed by Arkwin, indicate the nature and extent of soil contamination at the Arkwin Industries, Inc. facility to be:

Drywell DW1 - The soil inside or adjacent to this drywell contained methylene chloride, acetone and PCE, however there were no contaminants detected above SCGs for soil.

Drywell DW2 - The soil inside or adjacent to this drywell contained acetone, however there were no contaminants detected above SCGs for soil.

Drywell DW3 - The soil inside or adjacent to this drywell contained methylene chloride, however there were no contaminants detected above SCGs for soil.

Drywell DWX4 and DWX5 - In 1995, DWX4 was sampled and found to contain no concentrations of VOCs above the method detection limits. Drywell DWX5 is the overflow drywell for DWX4. As DWX5 was abandoned at the same time in the same fashion as DWX4 and was the overflow for DWX4, it is assumed that this drywell was not exposed to any VOCs and therefore was not sampled.

Drywell DW6 - The soil inside or adjacent to this drywell contained no contaminants above the analytical detection limits, therefore there were no contaminants detected above SCGs for soil.

Drywell DW7 - The drywells at the site were designated based on a numbering scheme. The

designation DW7 was skipped and, therefore, a drywell DW7 never existed.

Drywell DWX8 - The soil inside the drywell from 11 feet below grade to 27 feet below grade contained 1,1 dichloroethane as high as 43 ppm (the SCG is 0.2 ppm), TCA as high as 170 ppm (the SCG is 0.8 ppm), TCE as high as 2.1 ppm (the SCG is 0.7 ppm), and PCE as high as 8.1 ppm (the SCG is 1.4 ppm). These contaminants were detected above SCGs for soil. The soil adjacent to this drywell contained no contaminants above the analytical detection limits.

Drywell DWX9 - The soil inside or adjacent to this drywell contained methylene chloride, acetone, PCE, TCA, ethylbenzene, xylenes and toluenes, however there were no contaminants detected above SCGs for soil.

The groundwater investigation results indicate the presence of 1,1 dichloroethene as high as 1,500 ppb; 1,1 dichloroethane as high as 23,000 ppb; TCA as high as 63,000 ppb and methylene chloride as high as 1,000 ppb in well NC-24; PCE as high as 130 ppb and TCE as high as 37 ppb in well MW6. The SCGs in groundwater for these compounds are 5 ppb. Please refer to Table 1.

While the results of the groundwater investigation performed around the Arkwin site indicate the presence of contaminant migration, some of the results for monitoring well NC-24 include contamination which maybe attributable to its close proximity to a cesspool on the Tishcon property at 30 to 36 New York Avenue and 31 to 33 Brooklyn Avenue in the New Cassel Industrial Area and contamination which has come from this site.

3.2: Interim Remedial Measures

The Interim Remedial Measure which included the excavation and restoration of the contaminated source area of drywell DWX8 began on June 17, 1997 and was completed on June 18, 1997. The contaminated soil at this source area was excavated, removed and transported off-site to a permitted disposal facility. The PRP requested the ability to remediate the soil under an IRM and the NYSDEC concurred. This work was completed as an Interim Remedial Measure (IRM) under the supervision of NYSDEC.

The soil at DWX8 from grade level to 8 feet below ground contained no contaminants and was excavated and set aside for use as clean backfill material. The soil below this level was excavated and loaded into trailers for transport by a licensed hauler to a permitted disposal facility. Movement of soil during the excavation was controlled by using 10 foot diameter precast concrete rings, one on top of the other, around the excavation and the drywells existing rings. Five precast rings were used and a depth of excavation exceeding 26 feet was achieved. Three endpoint samples were collected from the bottom of the excavation. One sample was sent for immediate results to one laboratory. The other two samples were composited and sent to a New York State Department of Health certified laboratory.

The excavation was secured by placing a 9 inch thick precast concrete cap over the rings. The area just outside the rings, which had settled, was backfilled with clean fill and the area was closed off.

The sample sent for immediate results contained no contaminants above the analytical detection limits.

On July 18, 1997, the precast concrete cap was removed and the excavation was backfilled with clean fill. The precast concrete cap was replaced with the work area to be restored at a later date with a reinforced poured concrete slab.

All contaminated excavated material was transported off-site by a licensed hauler using 3 dump trailers and 3 rolloff trailers to a permitted disposal facility. The amount of contaminated soil was 132.37 tons.

3.3: Summary of Human Exposure Pathways

The contaminated groundwater in the New Cassel Industrial Area presents a potential route of

exposure to humans; however, the area is served by public water. This public water supply is treated and routinely monitored for purity and quality. Therefore, use of the groundwater in the area is not currently considered to be an exposure pathway of concern.

The contaminated on-site soil was removed under an IRM and presents no potential route of exposure to humans. Therefore, the on-site soil in the area is not considered to be an exposure pathway of concern.

3.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures which may be presented by the site. Presently, there are no completed pathways associated with the site. Pathways which may exist at the site in the future if additional remedial action is not undertaken are limited to exposure with the contaminated groundwater underneath the site and immediately down-gradient of the site. This contaminated groundwater will be addressed in a separate operable unit investigation for this site.

SECTION 4: ENFORCEMENT STATUS

The Potential Responsible Party (PRP) for the site is:

Arkwin Industries, Inc.
686 Main Street
Westbury, NY 11590

The NYSDEC and Arkwin Industries, Inc., (the site owner) entered into a Consent Order on July 26, 1996, Index # W1-0754-95-06. The Order obligates the responsible party to implement a Focused Remedial Investigation/Feasibility Study. The above order is the only order on record between the NYSDEC and Arkwin Industries, Inc.

The PRP implemented the Focused Remedial Investigation/Feasibility Study at the site when requested by the NYSDEC. The PRP requested the ability to remediate the soil under an IRM and the NYSDEC concurred. This work was performed by the PRP's consultant under the supervision of the NYSDEC.

SECTION 5: SUMMARY OF THE REMEDIAL GOALS

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

The proposed 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 through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce, control, or eliminate the impact of the contamination present within the soils on site.
- Eliminate or reduce the threat to the groundwater by eliminating or reducing contaminated groundwater beneath the source area.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Prevent, to the extent possible, migration of contaminants in the groundwater.
- Provide for attainment of SCGs for soil and groundwater quality.

SECTION 6: SUMMARY OF THE SELECTED REMEDY

The selected remedy should be protective of human health and the environment, be cost effective, comply with statutory laws and utilize

permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable.

As there are presently no significant threats to the public health or the environment as a result of soil contamination at this site, the NYSDEC believes that no further investigation or remediation is necessary at this site for the on-site soils.

The pathways which may exist at the site in the future if additional remedial action is not undertaken are limited to exposure with the contaminated groundwater underneath the site and immediately down-gradient of the site.

Based upon the results of the focused Remedial Investigation/Feasibility Study and the additional investigations that have been performed at the site, the Responsible Party submitted in June 1997 an Interim Remedial Measures Work Plan. The NYSDEC concurred with the use of an IRM and the Responsible Party performed an Interim Remedial Measure on the drywell DWX8. Since this IRM removed the soil contamination above SCGs from this site, the NYSDEC therefore determined that no further investigation or remediation of the on-site soils is necessary for this site. However, the contaminated groundwater will be addressed in a separate operable unit. Because of the presence of the contaminated groundwater beneath the site, which may have originated at the site, institutional controls will be implemented and deed restrictions will be recorded in the chain of title restricting the future use of the groundwater at the site.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remediation 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:

- The following repositories for documents pertaining to the site were established:

NYSDEC Central Office
Mr. Jeffrey Trad
50 Wolf Rd. - Rm. 242
Albany, NY 12233-7010
Phone: (518) 457-1708
Mon. To Fri.: 8:30 am to 4:45 pm

NYSDEC Region 1
SUNY Campus
Loop Road, Building 40
Stony Brook, NY 11790-2356
Phone: (516) 444-0241
Mon. To Fri.: 8:30 am to 4:45 pm

New Cassel Environmental Justice Project
847 Prospect Avenue
New Cassel, N.Y. 11590
Phone (516) 876-9526
Mon. To Fri.: 10:30 am to 1:00 pm

New Cassel/Westbury Youth Services Project
817 Prospect Avenue
New Cassel, NY 11590
Phone (516) 333-9224
Mon. To Fri.: 10:30 am to 10:00 pm

Westbury Memorial Public Library
445 Jefferson Street
Westbury, NY 11590
Phone (516) 333-0176
Mon. to Fri.: 9:30 am to 9:00 pm
Sat.: 9:30 am to 5:30 pm
Sun.: 1:00 pm to 5:00 pm

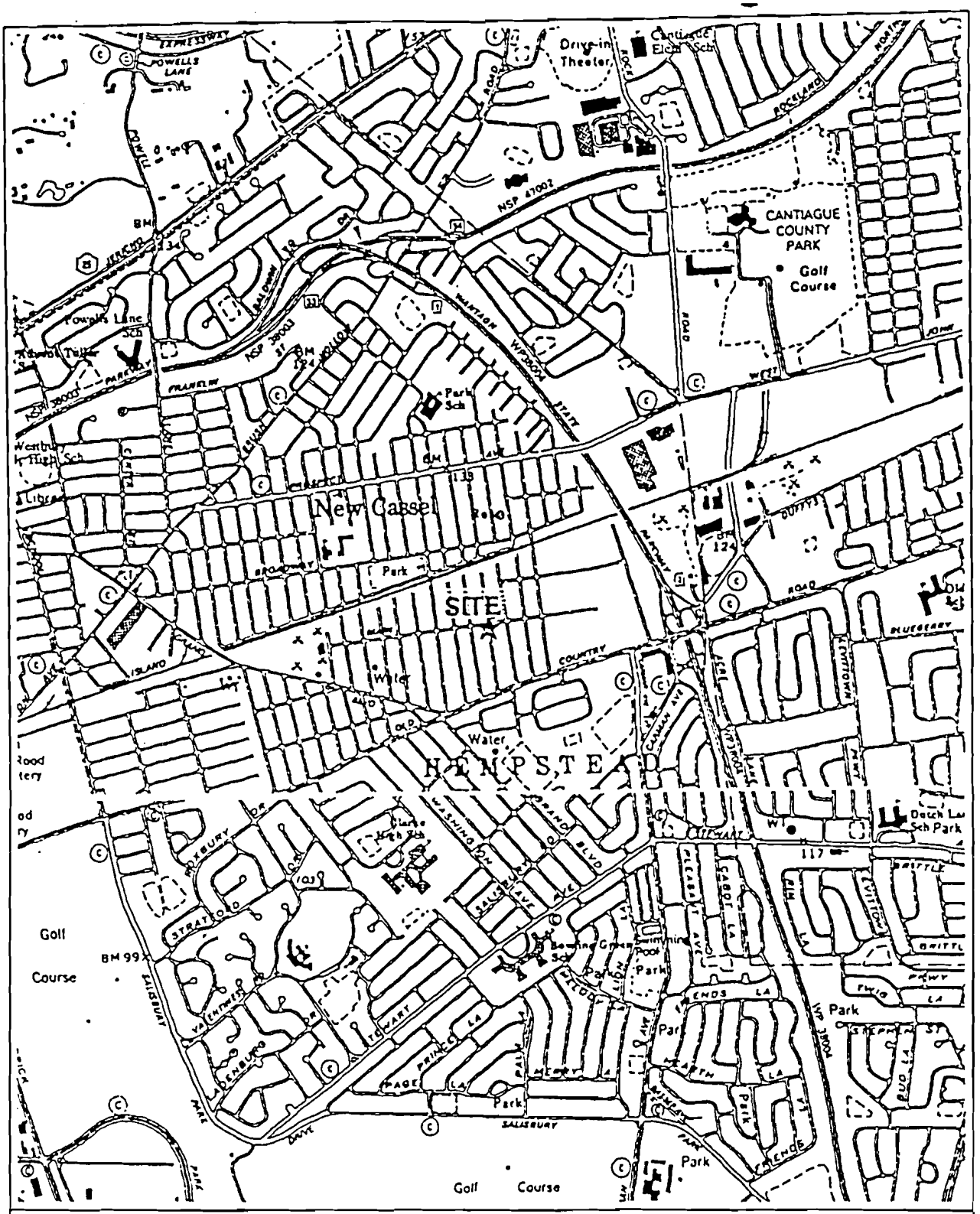
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- Fact sheets describing all aspects of the remediation of inactive hazardous waste disposal sites in the New Cassel Industrial Area, including the Arkwin Industries site, were distributed to the public in August 1995, November 1995, May 1996, September 1996, April 1997 and November 1997.

- Public information meetings were held in January 1996, May 1996, October 1996,

May 1997 and December 1997. DEC personnel were available to discuss all New Cassel Industrial Area sites, including the Arkwin Industries site, at each meeting.

- In January of 1998 a Responsiveness Summary, included in this Record of Decision as Appendix A, was written to address questions raised by the Public at the December 1997 public meeting and received by mail or telephone during the comment period for the Proposed Remedial Action Plan. In general, the public comments received were supportive of the selected remedy.



Site Location Map

130043D Arkwin Industries

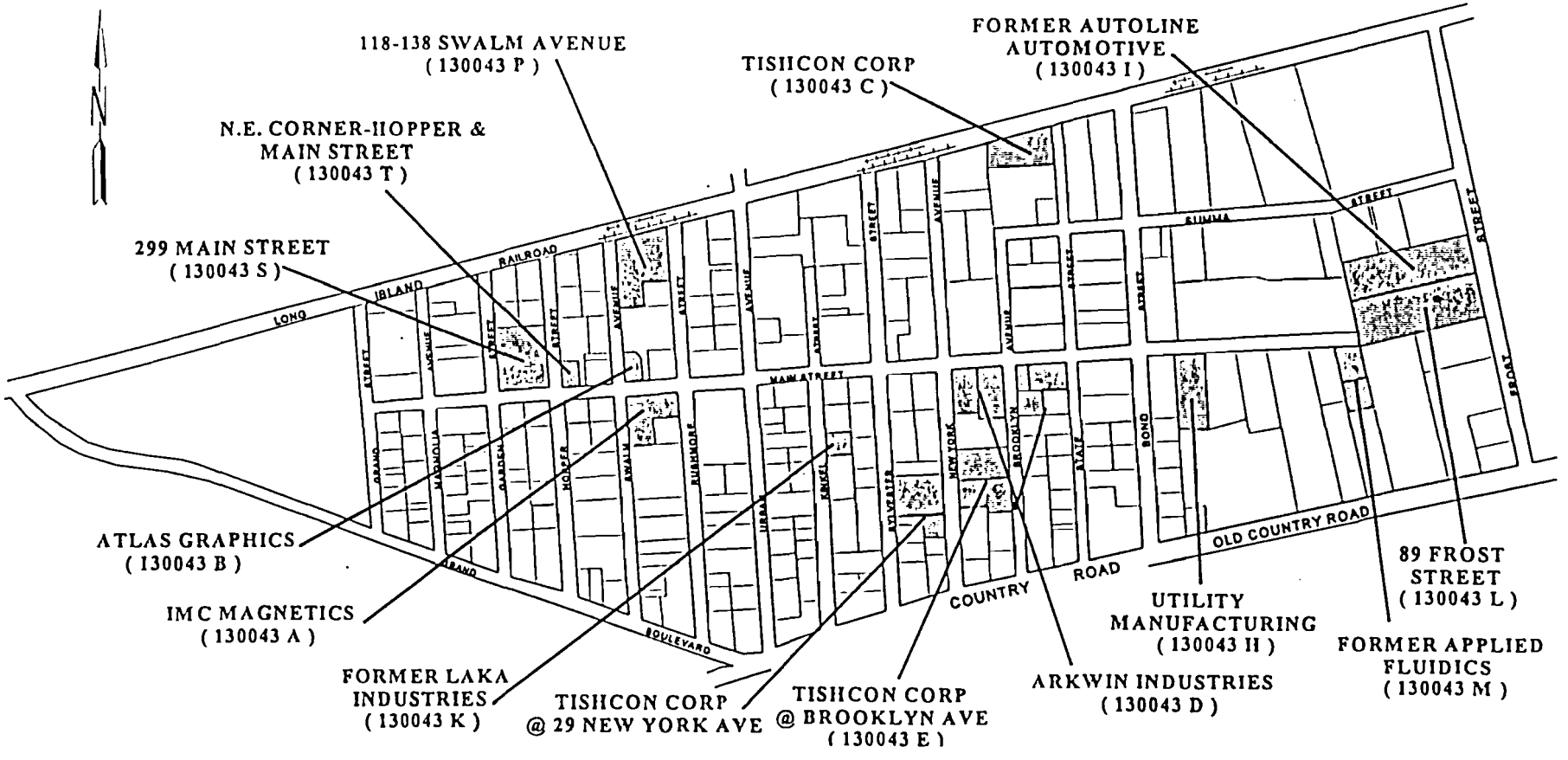
NYSDOT Planimetric Quadrangle(s):
HICKSVILLE, FREEPORT

Figure 1

N

0 500 1000 1500 2000
FEET

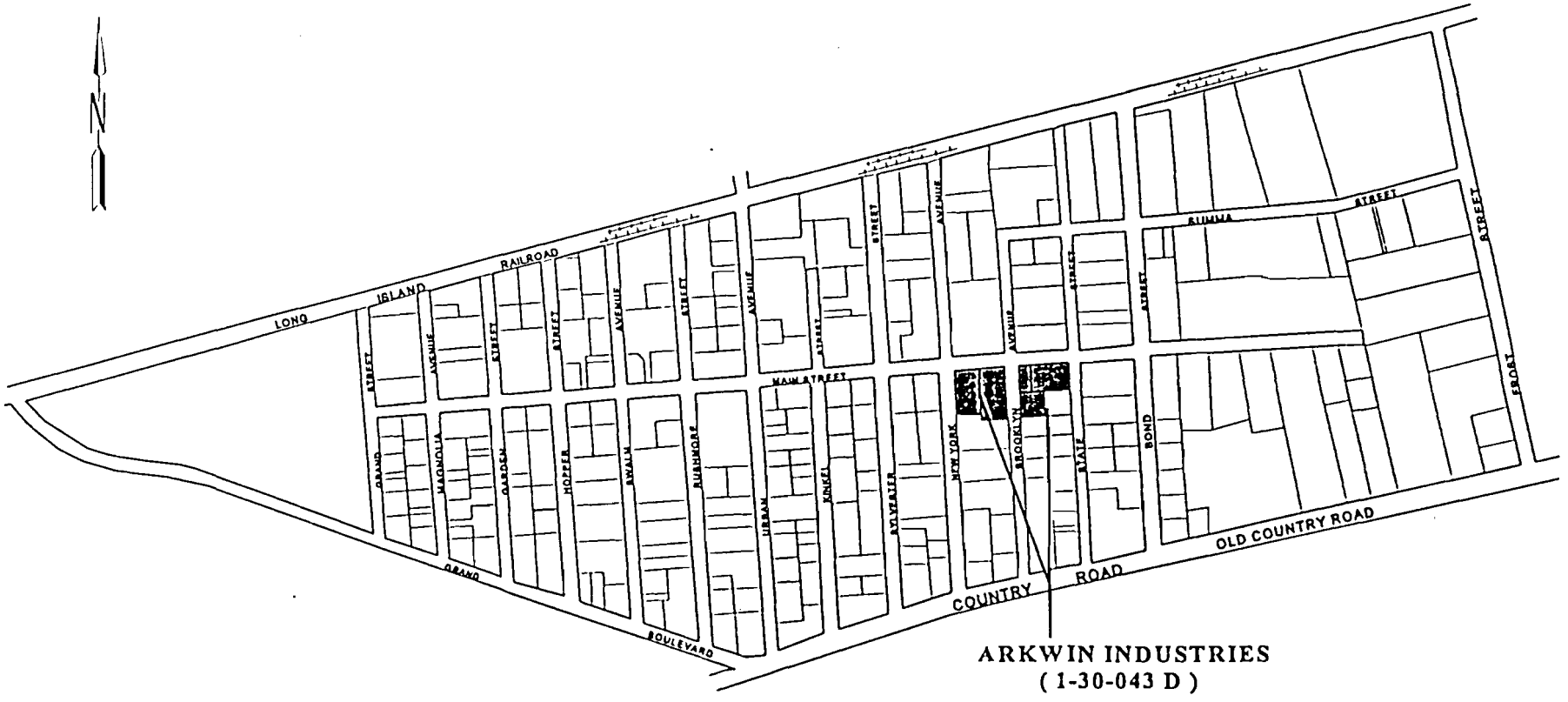
Scale 1:24,000



NEW CASSEL INDUSTRIAL AREA

Class 2 Registry Sites as of November 1997

Figure 1A



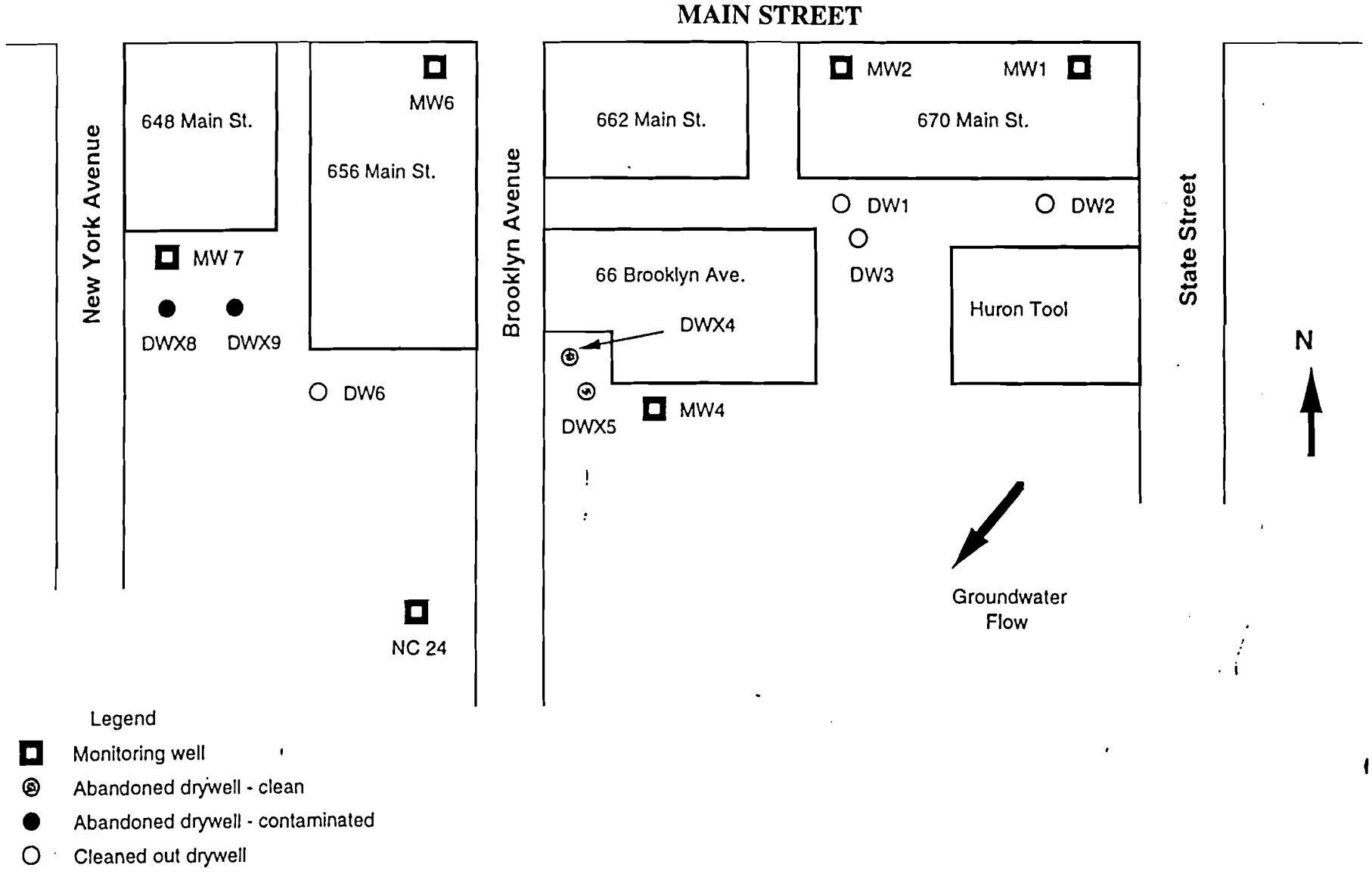
NEW CASSEL INDUSTRIAL AREA

ARKWIN INDUSTRIES

INACTIVE HAZARDOUS WASTE SITE

648- 656 MAIN ST., 662-670 MAIN ST., & 66 BROOKLYN AVE

Figure 2

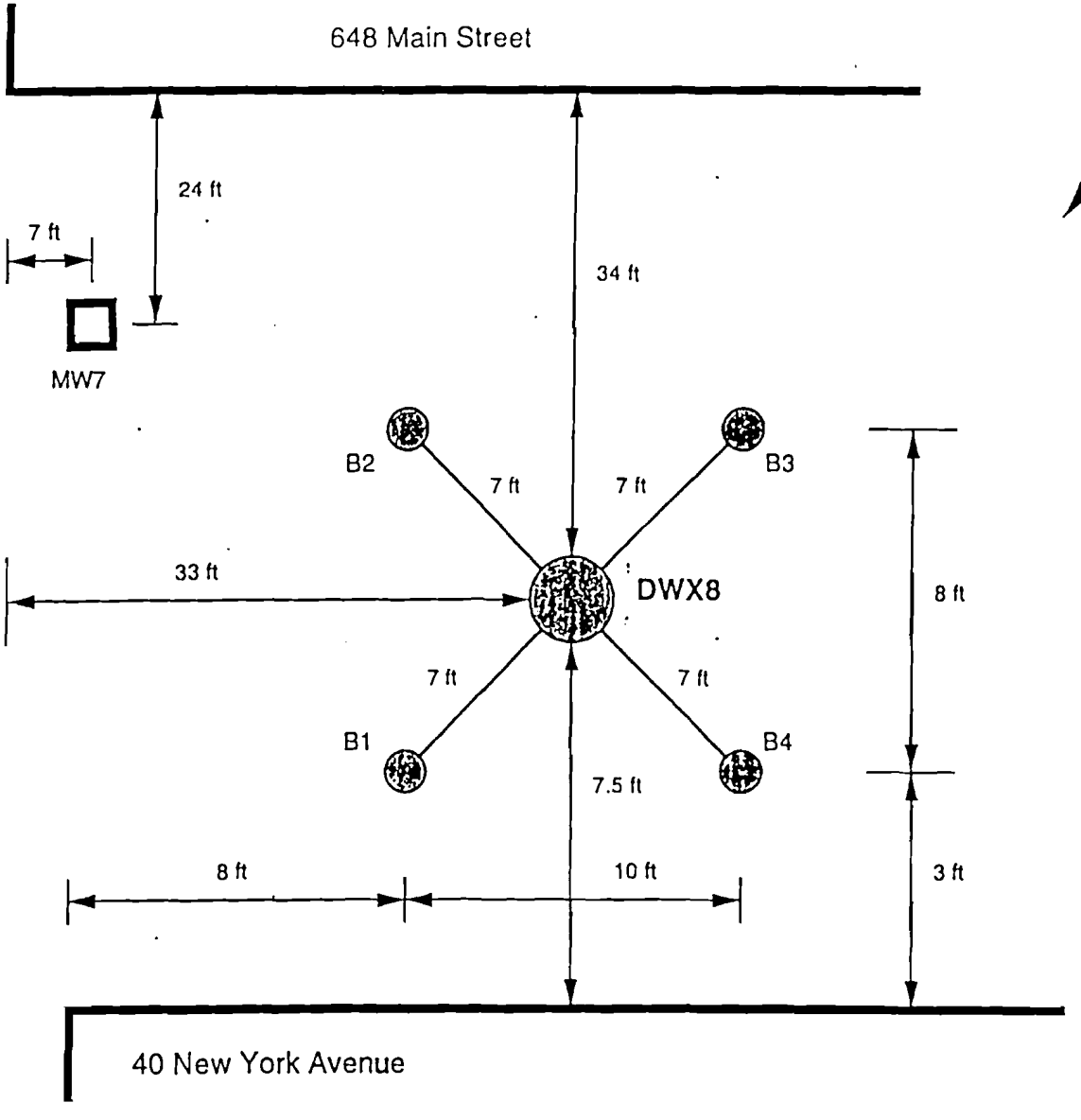


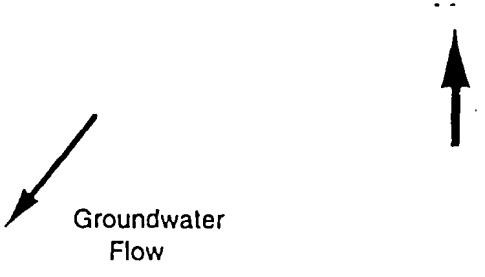
Site Plan with Drywell Locations and Groundwater Sampling Locations

Scale: none

Figure 3

Arkwin Industries, Inc.
Westbury, NY





sampled locations

All dimensions: approximate

Scale: none

Figure 4

Drywell X8 Location

Arkwin Industries, Inc.
Westbury, NY

Table 1

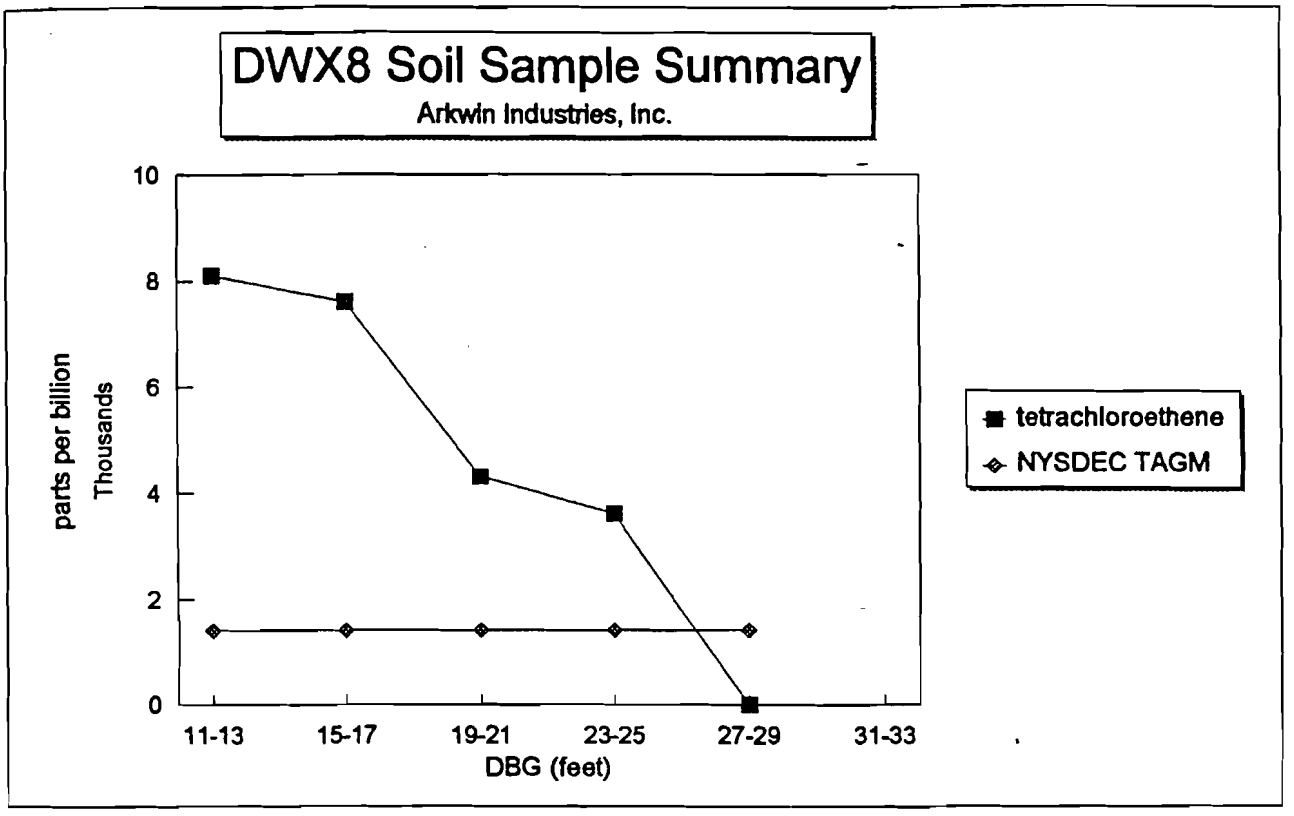
Summary of Concentrations of VOCs Detected In Collected Groundwater Samples

Sample Dates: September 10 and 11, 1996

Volatile Organic Compound	UPGRADIENT MW1 (ug/L)	UPGRADIENT MW2 (ug/L)	ONSITE MW4 (ug/L)	UPGRADIENT MW6 (ug/L)	ONSITE MW7 (ug/L)	DOWNGRADIENT NC 24 (ug/L)	NYSDEC Groundwater Quality Standard (ug/L)
1,1-dichloroethene	9.5	3.2	25	24	1.2	1,500	5
1,1-dichloroethane	5.8	4.1	83	25	nd	23,000	5
1,1,1-trichloroethane	52	9.7	350	490	8	63,000	5
tetrachloroethene	12	1.1	16	130	nd	nd	5
trichloroethene	2.8	27	10	37	nd	nd	5
methylene chloride	nd	2.8	7.9	16	2.3	1,000	5
benzene	nd	nd	nd	nd	7.2	nd	0.7

nd = not detected

Table 2



DBG (feet)	11-13 (ft)	Note 1 15-17 (ft)	19-21 (ft)	23-25 (ft)	27-29 (ft)	31-33 (ft)
Compound	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
1,1-dichloroethane	43,000		650			
1,1,1-trichloroethane	170,000	530	4,300	270	5	
trichloroethene	1,200		140			
toluene	2,100		650			
tetrachloroethene	**8,100**	**7600**	**4,300**	**3,600**	6	
dilution factor =	500	125	125	125	1	1

Note 1: from soil sampled in August 1996

NYSDEC TAGM Soil Cleanup Objective

1,1-dichloroethane	200	ppb
1,1,1-trichloroethane	800	ppb
trichloroethene	700	ppb
toluene	1,500	ppb
tetrachloroethene	1,400	ppb

except where noted all soil samples were collected 12/09/96

APPENDIX A

Responsiveness Summary
Arkwin Industries Site
Site ID: 1-30-043D

This document summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for Operable Unit 01 of the Arkwin Industries Site in the New Cassel Industrial Area, in the Village of Westbury, Town of North Hempstead, Nassau County, New York. A comment period from November 20,1997 to December 22, 1997 was provided to receive comments from the public on this PRAP. A public meeting was held on December 4, 1997 at the Dreyden Street School to present the results of the Focused Remedial Investigation of the site and to discuss the PRAP. A public meeting was also held on May 8, 1997 to discuss the investigation results of this site and the overall status of the New Cassel Industrial Area in general. The May 8, 1997 meeting was held at the Park Avenue Elementary School.

This responsiveness summary is comprised of verbal comments and questions voiced during the December 4, 1997 meeting that were relevant to the investigation and remedy presented in the PRAP for this site, as well as written comments received during the associated thirty-two day comment period.

The following comments and questions are paraphrased from the public meeting.

1. C: Where did the contaminated material go after it was excavated from the drywell?

   R: The contaminated material was transported by licenced haulers to the EQ- The Environmental Quality Company, Michigan Disposal, Inc. in Belleville, Michigan for treatment and/or disposal.

2. C: What are the primary contaminants and their concentrations?

   R: In the soils, the only location of contaminants above standard was Drywell DWX8. The soil inside the drywell from 11 feet below grade to 27 feet below grade contained 1,1 dichloroethane as high as 43 ppm (the SCG is 0.2 ppm), TCA as high as 170 ppm (the SCG is 0.8 ppm), TCE as high as 2.1 ppm (the SCG is 0.7 ppm), and PCE as high as 8.1 ppm (the SCG is 1.4 ppm).

3. C: Do the drywells flow into the storm drain system?

   R: Typically, no. However, when a drywell is taken out of service, the roof or parking lot drain may be connected to the storm drain system. When a cesspool is taken out of service, its lateral pipe is connected to the sanitary sewer system.

4. C: How long have the contaminants been in the soil?

R: Although the Department does not know the exact date which on-site contaminant disposal began, Arkwin began operating in the NCIA in 1955. Therefore, the time could be as long as 42 years.

5. C: The report should clarify if there are any floor drains located inside the five Arkwin buildings. If floor drains exist or previously existed, all discharge points should be investigated.

R: No floor drains presently exist and Arkwin indicated that no floor drains previously existed in the buildings.

6. C: The report should clarify if there are any storm drains or catch basins located on Brooklyn Avenue between Main Street and Monitoring Well NC-24.

R: There are no storm drains, cesspools or catch basins attributable to the Arkwin site on Brooklyn Avenue between Main Street and Monitoring Well NC-24. There are storm sewer catch basins at the curbs of Brooklyn Avenue between Main Street and Monitoring Well NC-24. While the results of the groundwater investigation performed around the Arkwin site indicate the presence of contaminant migration, some of the results for monitoring well NC-24 may include contamination which is attributable to its close proximity to a cesspool on the Tishcon property at 30 to 36 New York Avenue and 31 to 33 Brooklyn Avenue in the New Cassel Industrial Area.

7. C: Monitoring well data indicates that groundwater in the vicinity of Arkwin Industries is contaminated with high levels of VOCs. A plan for defining and remediating groundwater contamination at the site should be required. The August 15, 1997 IRM/Final Engineering Report from the PRP's consultant does not provide any conclusions or recommendations regarding the groundwater contamination at the site.

R: The first phase of investigatory work was primarily focussed on the soil contamination at the site, the result of which are presented in the ROD. The contaminated groundwater will be addressed in a separate operable unit.

8. C: The bottom of drywell DW-1 is reported to be 12 feet below grade, the bottom of DW-2 is reported to be 11 feet below grade , and the bottom of DW-3 is reported to be 14 feet below grade. During the investigation to determine the extent of contamination beneath drywells DW1, 2 and 3, a boring was advanced inside the rings of DW1, 2 and 3. The soil sample collected from inside of the rings was collected at 25 feet below grade for DW1, 2 and 3. Apparently there was no investigation of the soils from the bottom of the drywells down to 25 feet below grade. The conclusion of the August 15, 1997 IRM/Final Engineering Report that no soil remediation is required in the area of these drywells may

not be correct. The soil located between the bottom of the drywells and 25 feet below grade should be further investigated.

R: In March 1995, the sediments were removed from drywells DW1, 2 and 3 until the drywell bottom was visually clean and endpoint samples were collected. The endpoint samples indicate that hazardous constituents remaining in the soil are below Standards, Criteria, and Guidelines (SCGs). In August 1996, in accordance with the Order on Consent, Exhibit B Work Plan, additional borings were advanced inside and around the rings of the drywells DW1, 2 and 3 to determine horizontal and vertical extent of any remaining contamination. Borings at DW1, 2 and 3 were advanced to depths of 25 to 27 feet and 35 to 37 feet where samples were collected to ensure there was no contamination migrating from the previously removed sediments to the groundwater (a sample from DW-1 at 35 to 37 feet was not obtained due to excessive deflection of the unsupported Geoprobe rods inside the open space of the drywell).

9. C: No data or information was provided regarding DWX4 and DWX5, which should be included in the report.

R: Drywell DWX4 was sampled in March 1995 and found to contain no of VOCs above the method detection limits. Drywell DWX5 is the overflow drywell for DWX4. As DWX5 was abandoned at the same time in the same fashion as DWX4 and was the overflow for DWX4, it is assumed that this drywell was not exposed to any VOCs and therefore was not sampled. The PRAP on pages 3 and 4 and this ROD on pages 2 and 3 summarize this historical investigation work performed at drywells DW-4 and DW-5.

10. C: One of the elements of the proposed remedy is a deed restriction. What is a deed restriction?

R: A deed restriction, also called "covenant" or " restrictive covenant" is a land use control restricting the use of the property and is included in the chain of title of the property and other land records to alert the public and subsequent purchasers about the restricted use. The deed restriction is often recorded in a document entitled "Declaration of Covenants and Restriction" and is filed with the governmental agency responsible for keeping land records.

A Declaration of Covenants and Restrictions will be filed with the Office of the County Clerk in Nassau County on the Arkwin Industries property indicating that the use of the groundwater at the site will be restricted due to groundwater contamination.

11.C: The PRAP states that a deed restriction is needed as part of a final remediation. There are no details of what the deed restriction covers. Please provide additional information regarding details of the restriction. Perhaps a "notification" to the deed would be sufficient to achieve the Department's goals.

R: The deed restriction is necessary to alert the public and subsequent purchasers that the groundwater is contaminated at the site and that its use is restricted because of the contamination.

Appendix B

Arkwin Industries Site
ID: (1-30-043D)
Operable Unit 01 - Soils

ADMINISTRATIVE RECORD

1. New York State Superfund Contract, Site Investigation Report, New Cassel Industrial Area Site, Work Assignment No. D002676-2.2, Lawler Matusky & Skelly Engineers, February 1995.

2. Comprehensive Citizen Participation Plan, New Cassel Industrial Area Site, Site ID: 1-30-043 A-K, New York State Department of Environmental Conservation, November 1995.

3. New York State Superfund Contract, PSA Report, New Cassel Industrial Area Site, Work Assignment No. D002676-2.2, Lawler Matusky & Skelly Engineers, March 1996.

4. New York State Superfund Contract, Multisite PSA Task 4 Report, New Cassel Industrial Area Site, Work Assignment D002676-12B-1, Lawler Matusky & Skelly Engineers, March 1997.

5. Focused Remedial Investigation/Feasibility Study and Interim Remedial Measures Work Plan, Anson Environmental, Ltd., July 1996.

6. Focused Feasibility Study and Interim Remedial Measures Work Plan, Anson Environmental, Ltd., June 1997.

7. Interim Remedial Measures/Final Engineering Report (including Focused Remedial Investigation/Feasibility Study Report), Anson Environmental, Ltd., August 1997.

APPENDIX C

Record of Decision Glossary
for the
Arkwin Industries Inactive Hazardous Waste Disposal Site

Ambient Water Quality Standards and Guidance Values -- These are the NYS standards and guidance values for the protection of water bodies.

Cesspools -- These are underground drainage structures, similar in construction to storm drains. They are often used to dispose of rainwater and/or sewage in areas where there is no public sewer system.

Citizen Participation -- A program of planning and activities to encourage communication among people affected by or interested in hazardous waste sites and the government agencies responsible for investigating and remediating them.

Citizen Participation Plan -- A document which must be developed at a site's Remedial Investigation stage. A CP Plan describes the citizen participation activities that will be conducted during a site's remedial process.

Class 2 site -- The NYSDEC assigns inactive hazardous waste sites to classifications established by state law, as follows:

Classification 1 -- a site causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or the environment, immediate action is required.

Classification 2 -- a site posing a significant threat to the public health or environment , action is required.

Classification 2a -- a temporary classification for a site known or suspected to contain hazardous waste. Most likely the site will require additional investigation and based on the results, the site would then be reclassified.

Classification 3 -- a site at which hazardous waste is confirmed but does not pose a significant threat to the public health or the environment, action may be deferred.

Classification 4 -- a site which has been properly closed, but will require continued management.

Classification 5 -- a site which has been properly closed with no evidence of present or potential adverse impact , no further action is required.

Consent Order -- A legal and enforceable agreement negotiated between NYSDEC and a responsible party. The order sets forth agreed upon terms by which a responsible party will undertake site investigation and/or cleanup, or pay for the costs of those activities. The order includes a description of the remedial actions to be taken by the responsible party with NYSDEC oversight, and a schedule for implementation.

Delist -- This is the action by which the NYSDEC removes a hazardous waste site from the Registry. This is done based on the determination that: the site contains inconsequential amounts of hazardous waste; or that a remediated site no longer requires operation and maintenance; or that a remediated site does not require operation and maintenance.

Down Gradient -- See up gradient.

Environmental Notice Bulletin -- This a trade paper that carries information on the environmental field, including legally required notices to the public for the reclassification of a hazardous waste site and other environmental related items.

Exposure Pathway -- This is the term for the pathway that a contaminant could use to migrate from a source to an existing or potential point of contact with the public. For example, the oil slick from a spill could be an exposure pathway to swimmers in a lake.

Feasibility Study (FS) -- This is a study undertaken to develop and evaluate options for the the site to eliminate or reduce the threat to public health and the environment. This study often includes data analysis and may be conducted during or after the RI.

Focused Remedial Investigation (FRI) -- A focused remedial investigation is an investigation that is primarily directed at known, or likely, source areas of contamination.

Geoprobe points/borings -- A geoprobe is a piece of equipment that can collect soil and water samples from below the ground. The place on the ground where the sample is obtained from, is referred to as a point or boring.

Interim Remedial Measure (IRM) -- This is an activity that is conducted to quickly provide relief to reduce the risk to public health or the environment from a well defined hazardous waste problem. These activities include removing contaminated soil and drums, providing alternative water supplies or securing a site to prevent access.

Monitoring Wells -- These are groundwater wells that are installed for the sole purpose of obtaining groundwater samples. Essentially, they are pipes that extend down to the groundwater.

NCIA -- New Cassel Industrial Area. This is an industrial area that is located in the Village of Westbury, Town of North Hempstead. The industrial area is bordered on the south by Old Country Road, on the east by Frost Street, on the west by Grand Boulevard, and the north by the Long Island Railroad.

NYS -- New York State

NYSDEC -- New York State Department of Environmental Conservation.

NYSDOH -- New York State Department of Health.

PAHs -- Petroleum Aromatic Hydrocarbons. A group of petroleum related compounds. These compounds are often found in industrial areas and places where petroleum products (gasoline, hydraulic fluid, etc.) are used.

Part V of the NYS Sanitary Code -- These are the New York State regulations that apply to drinking water supplies and sources.

Parts per Million (PPM) -- This is a way of measuring concentrations of contaminants in soil, water and air. It is the equivalent of one unit of material mixed in with one million units of another material. For example, one ounce of salt mixed in with one million ounces of soil. One ppm is the same as one thousand (1,000) ppb.

Parts per Billion (PPB) -- This is a way of measuring low concentrations of contaminants in soil, water and air. It is the equivalent of one unit of material mixed in with one billion units of another material. For example, one ounce of salt mixed in with one billion ounces of soil. One ppb is one-thousandth ($^{1}/_{1000}$) of one ppm.

Petroleum Hydrocarbons -- A group of petroleum related compounds. These compounds are often found in industrial areas and places where petroleum products (gasoline, hydraulic fluid, etc.) are used.

PRPs -- Potentially Responsible Parties. These are the parties that may be legally liable for the site. PRP's include: those who owned the site during the time wastes were placed, current owners, past and present operators of the site, and those who generated the wastes placed at the site.

Proposed Remedial Action Plan (PRAP) -- This is a document that identifies and discusses the proposed remedial action plan that the NYSDEC believes is the most appropriate for an inactive hazardous waste site. This document also summarizes the site history, results of investigations, and any remedial work performed at the site. This proposed remedy is reviewed by the public and other state agencies.

Registry -- The New York State Inactive Hazardous Waste Site Registry. This is a document

that the NYSDEC is directed by law to maintain and which lists and provides information about every site in New York State which meets the criteria established through the definition of hazardous waste and the classification system.

Remedial Investigation (RI) -- A remedial investigation is an investigative process to fully determine the nature and extent of contamination at a site by collecting and analyzing data. This investigation also delineates the area of contamination that the contamination has migrated to.

Responsiveness Summary -- A summary of responses by the NYSDEC to all significant public questions and comments. A written responsiveness summary is included in a Record of Decision to the questions and comments on the Proposed Remedial Action Plan for a site.

Record of Decision (ROD) -- This is a document that identifies the selected remedy for an Inactive Hazardous Waste Disposal Site. This document is the result of the public input received on the PRAP.

Route of Exposure -- See Exposure Pathway.

SCGs -- Standards, Criteria And Guidelines. These are regulatory values specified for several environmental media such as air, groundwater, surface water, soil and sediment.

Significant Threat -- The determination based on available evidence and relevant factors, that the hazardous waste disposed at the site has or may result in an adverse impact upon public health or the environment.

Soil Gas -- Soil is composed of smaller pieces of rock and earth. In between these pieces, are smaller spaces that are empty except for air and some components of the soil, such as vapors or chemical contaminants.

State Super Fund (SSF) -- This is a program that was established to fund the investigation and cleanup of hazardous wastes for which no responsible party could be identified or for which the responsible party is unable to fund the work.

TAGM 4046 -- Technical And Guidance Memorandum. These are guidance documents issued by the NYSDEC for the investigation and remediation of hazardous waste sites. The number 4046, refers to the TAGM entitled Determination of Soil Cleanup Objectives and Clean Up Levels.

TCL/TAL -- Target Compound List/Target Analyte List. This is a list of compounds that are analyzed for at hazardous waste sites. This list includes volatile organic compounds, semi volatile organic compounds, pesticides, polychlorinated biphenols, and metals.

Up Gradient -- A location or area that is higher. With respect to groundwater, this is an area or

place that groundwater is flowing from. This is the opposite of down gradient, which is an area or place that groundwater is flowing to.

VOCs -- Volatile Organic Compounds. This a group of chemicals such as benzene, vinyl chloride, 1,1, 1 trichloroethane, trichloroethene, dichloroethane, dichloroethene, and tetrachloroethane.