# DECISION DOCUMENT

American Cleaners Inc.
Operable Unit Number 01: On-Site Soil/Soil Vapor
Voluntary Cleanup Program
Middletown, Orange County
Site No. V00461
April 2012

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

# DECLARATION STATEMENT - DECISION DOCUMENT

American Cleaners Inc.
Operable Unit Number: 01
Voluntary Cleanup Program
Middletown, Orange County
Site No. V00461
April 2012

**Statement of Purpose and Basis**

This document presents the remedy for Operable Unit Number: 01: On-Site Soil/Soil Vapor of the American Cleaners Inc. site, a voluntary cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and applicable guidance.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number: 01 of the American Cleaners Inc. site and the public's input to the proposed remedy presented by the Department.

**Description of Selected Remedy**

The elements of the remedy are as follows:

1. Green remediation principals and techniques will be implemented to the extent feasible in the implementation and site management of the remedy as per DER-31. The major green remediation components are as follows;
   a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   b. Reducing direct and indirect greenhouse gas and other emissions;
   c. Increasing energy efficiency and minimizing use of non-renewable energy;
   d. Conserving and efficiently managing resources and materials;
   e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. A Soil Vapor Extraction (SVE) system, an in-situ technology used to treat volatile organic compounds (VOCs) in soil, will be installed at the site. The process physically removes contaminants from the soil by applying a vacuum to a SVE well that has been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then run through an activated carbon treatment canister (or other air treatment process as applicable) to remove the VOCs before the air is discharged to the atmosphere. The SVE system will also be designed to address Soil Vapor Intrusion (SVI) concerns in the on-site building.

At this site, SVE wells will be installed in the vadose zone and screened from 2 feet below the ground surface to a depth of approximately 7 feet. The air containing VOCs extracted from the SVE wells will be treated using activated carbon (or other air treatment as applicable).

The installation of a Soil Vapor Extraction (SVE) system will be performed in two phases. The first will be the installation of approximately 4 SVE wells adjacent to the west side of the building where some of the highest concentrations of soil vapor have been found. Once the initial SVE system is operational and functional (assume two months of continuous operation), the operational data will be used to design the second phase, which will address lower levels of contamination in soil and soil vapor around the building and the highest levels of contaminants under the building. The Phase 2 Remedial Design will be submitted to the Department within 6 months of the point Phase 1 is operational.

3. A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs) for commercial sites. Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Imposition of an Institutional Control in the form of a deed restriction for the controlled property that:
   a. requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
   b. allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
   c. restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
   d. requires compliance with the Department approved Site Management Plan.

5. A Site Management Plan is required, which includes the following:
   a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
   Institutional Controls: The Deed Restriction discussed in Paragraph 2 above.
   Engineering Controls: This plan includes, but may not be limited to:
   o an Excavation Plan which details the provisions for management of future

excavations in areas of remaining contamination;

- descriptions of the provisions of the deed restriction including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any change in use from the present dry cleaning operations and an future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of soil vapor, soil and groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion if the site usage changes from the present dry cleaner operation and for any future buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item a, above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

**Declaration**

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

April 25, 2012
Date

Michael Ryan, Director
Remedial Bureau C

# DECISION DOCUMENT

American Cleaners Inc.
Middletown, Orange County
Site No. V00461
April 2012

## SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The Voluntary Cleanup Program (VCP) is a voluntary program. The goal of the VCP is to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfields." This document is a summary of the information that can be found in the site-related reports and documents.

## SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Middletown Thrall Library
Attn: Mary Climes
11-19 Depot Street
Middletown, NY 10940
Phone: 845-341-5461

DEC Region 3 Office
Attn: Michael Knipfing
21 South Putt Corners Road
New Paltz, NY 12561
Phone: 845-2563154

**Receive Site Citizen Participation Information By Email**

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

## SECTION 3: SITE DESCRIPTION AND HISTORY

Location: American Cleaners is in a commercial area of the City of Middletown, Orange County. The site is located about 0.4 miles east of the Middletown City boundary at 360 State Route 211E. The site is just northwest of the Caldor-Lloyds Mall.

Site Features: The American Cleaners building is single story structure located in the northwest corner of the Mall property. It is surrounded by asphalt parking spaces and some small grassy areas. The entire site slopes down to the north toward State Route 211. A storm water culvert is to the north of the site that allows surface water to run northeast under Route 211. Surface water flows east towards Silver Lake.

Current Zoning/Use(s): The site is currently an active dry cleaner. The property is zoned for commercial use. The surrounding parcels are used by various stores and eateries including a Credit Union to the northeast, restaurant and a former video store to the northwest and a former department store is located uphill to the south. The nearest residential areas are about .25 miles north of State Route 211.

Historic Use(s): The building was constructed in 1982 by the current owner for use as a dry cleaning business and is still in operation. The chemical of concern, tetrachloroethylene (also called tetrachloroethene, perchlorethylene, perc and PCE), has been used at the site since 1982. Unregulated releases of PCE are reported to have started in 1982 when PCE-saturated filters were placed in the dumpster outside the back of the building for disposal. The filters dripped PCE onto the asphalt and the ground below. During the mid-1980's a delivery truck reportedly spilled an unknown amount of PCE near the back of the building. In 1999, the underground storage tank (UST) for fuel oil storage at the back of the building was replaced with a new tank closer to the north end of the building. A site investigation conducted at the time of the tank removal indicated the presence of petroleum contamination along with PCE.

Operable Units: In 2011 the site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

OU1 is defined as the on-site property and includes contaminated soil and soil vapor in and around the building.

OU2 consists of all contaminated groundwater, on-site and off-site, and other off-site contaminated media.

Site Geology and Hydrogeology: The site slopes down toward State Route 211. Groundwater is about 4 to 7 feet deep. Groundwater flows north toward the storm water culvert located adjacent to State Route 211. The soil is mostly silt with some clay layers. Some of the clay layers are very close to the surface which prevents water from rain events from draining properly. North of the site, near the storm water culvert, there appears to be more fill material which contains large cobbles and boulders.

Operable Unit (OU) Number 01 is the subject of this document.

A Decision Document will be issued for OU 02 in the future.

A site location map is attached as Figure 1.

## SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, at a minimum, alternatives (or an alternative) that restrict(s) the use of the site to industrial use as described in DER-10, Technical Guidance for Site Investigation and Remediation were/was evaluated.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

## SECTION 5: ENFORCEMENT STATUS

The voluntary cleanup agreement is with a responsible party. The agreement requires the party to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

A Voluntary Cleanup Agreement was reached in 2003, where the owner of the dry cleaner agreed to investigate and remediate the site.

## SECTION 6: SITE CONTAMINATION

### 6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and

- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- air
- groundwater
- soil
- soil vapor
- indoor air

### 6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

### 6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

| | |
|---|---|
| TETRACHLOROETHYLENE (PCE) | VINYL CHLORIDE |
| TRICHLOROETHENE (TCE) | DICHLOROETHYLENE |

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

## 6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

## 6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: Based on the investigations conducted to date the primary contaminant of concern at the site is tetrachloroethylene (PCE or Perc), a dry cleaning solvent. PCE is noted in on-site groundwater above groundwater standards, in on-site subsurface soil above the protection of groundwater soil cleanup objective, and elevated soil vapor concentrations were observed on-site. To a lesser extent, the degradation by-products trichloroethene and 1,2-dichloroethene have been detected in groundwater and soil gas. An off-site groundwater investigation is underway to determine the nature and extent of the plume.

Sampling of on-site subsurface soil indicates PCE concentrations up to 1.9 parts per million (ppm) in soil outside the building and up to 78 ppm under the building. On-site groundwater has levels of PCE at 4,000 parts per billion (ppb). Soil vapor sampling just outside the back door of the facility has found PCE at 580,000 micrograms per cubic meter (ug/m3) and PCE in sub-slab soil vapor below the building is reported at 20,000 ug/m3.

Special Resource: There are no special environmental resources identified on site. Site storm water runs north into a storm water culvert and appear to flow east eventually into Silver Lake.

## 6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Direct contact with contaminants in the soil is unlikely because the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served

by a public water supply that is not affected by this contamination. Volatile organic compounds in the soil or groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into the overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion in the on-site building. Sampling indicates soil vapor intrusion is not a concern for current off-site buildings. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for future off-site development.

### 6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

**Soil**

**RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

**RAOs for Environmental Protection**

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

**Soil Vapor**

**RAOs for Public Health Protection**

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

## SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation.

The selected remedy is referred to as the Soil Vapor Extraction remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Green remediation principals and techniques will be implemented to the extent feasible in the implementation and site management of the remedy as per DER-31. The major green remediation components are as follows;

a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
b. Reducing direct and indirect greenhouse gas and other emissions;
c. Increasing energy efficiency and minimizing use of non-renewable energy;
d. Conserving and efficiently managing resources and materials;
e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. A Soil Vapor Extraction (SVE) system, an in-situ technology used to treat volatile organic compounds (VOCs) in soil, will be installed at the site. The process physically removes contaminants from the soil by applying a vacuum to a SVE well that has been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then run through an activated carbon treatment canister (or other air treatment process as applicable) to remove the VOCs before the air is discharged to the atmosphere. The SVE system will also be designed to address Soil Vapor Intrusion (SVI) concerns in the on-site building.

At this site, SVE wells will be installed in the vadose zone and screened from 2 feet below the ground surface to a depth of approximately 7 feet. The air containing VOCs extracted from the SVE wells will be treated using activated carbon (or other air treatment as applicable).

The installation of a Soil Vapor Extraction (SVE) system will be performed in two phases. The first will be the installation of approximately 4 SVE wells adjacent to the west side of the building where some of the highest concentrations of soil vapor have been found. Once the initial SVE system is operational and functional (assume two months of continuous operation), the operational data will be used to design the second phase, which will address lower levels of contamination in soil and soil vapor around the building and the highest levels of contaminants under the building. The Phase 2 Remedial Design will be submitted to the Department within 6 months of the point Phase 1 is operational.

3. A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs) for commercial sites. Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Imposition of an Institutional Control in the form of a deed restriction for the controlled property that:
   a. requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
   b. allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
   c. restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
   d. requires compliance with the Department approved Site Management Plan.

5. A Site Management Plan is required, which includes the following:
   a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
      Institutional Controls: The Deed Restriction discussed in Paragraph 2 above.
      Engineering Controls: This plan includes, but may not be limited to:
      - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
      - descriptions of the provisions of the deed restriction including any land use, and groundwater use restrictions;
      - a provision for evaluation of the potential for soil vapor intrusion for any change in use from the present dry cleaning operations and an future buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
      - provisions for the management and inspection of the identified engineering controls;
      - maintaining site access controls and Department notification; and
      - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

   b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
      - monitoring of soil vapor, soil and groundwater to assess the performance and effectiveness of the remedy;
      - a schedule of monitoring and frequency of submittals to the Department;
      - monitoring for vapor intrusion if the site usage changes from the present dry cleaner operation and for any future buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item a, above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
   - maintaining site access controls and Department notification; and
   - providing the Department access to the site and O&M records.

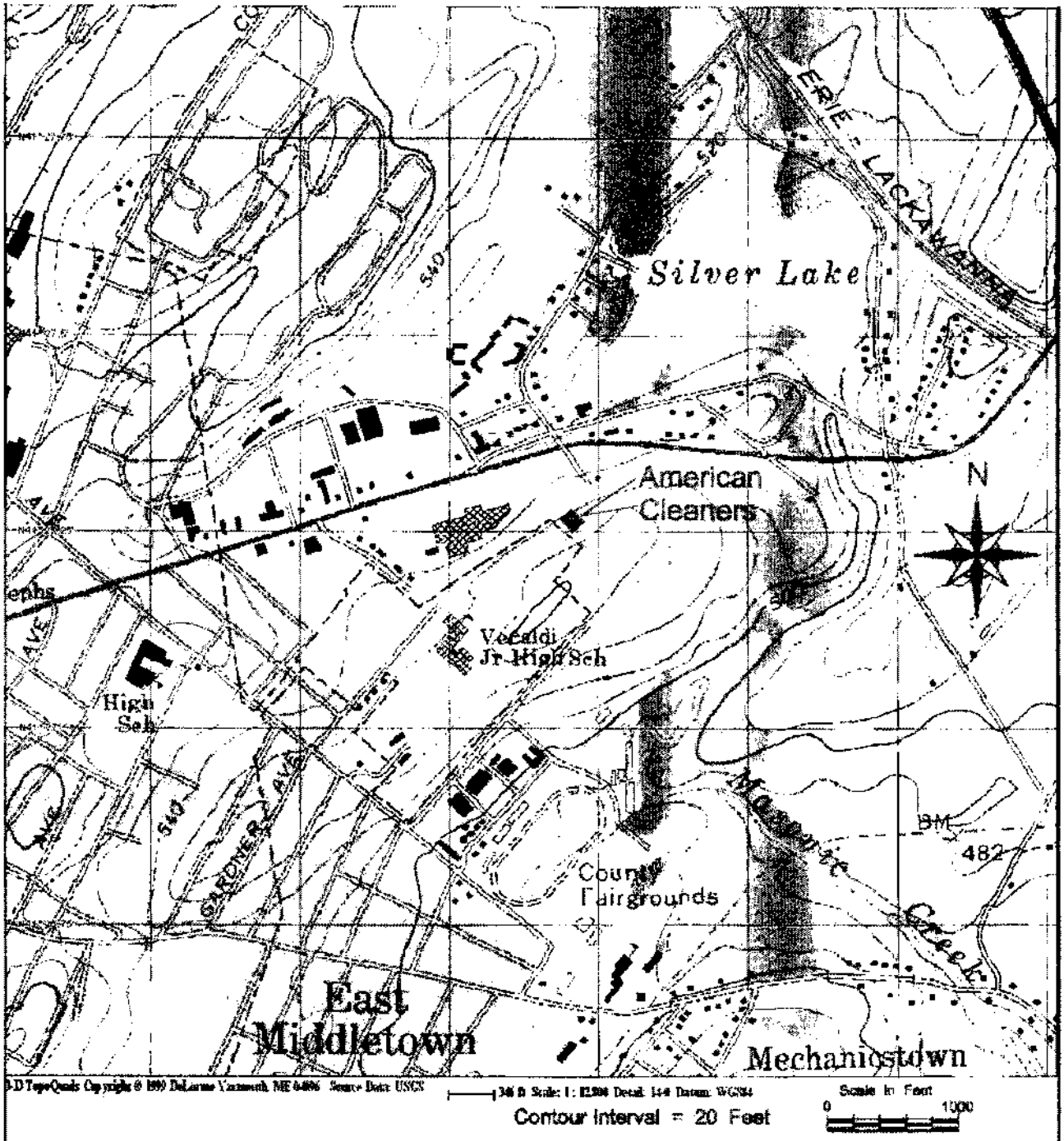
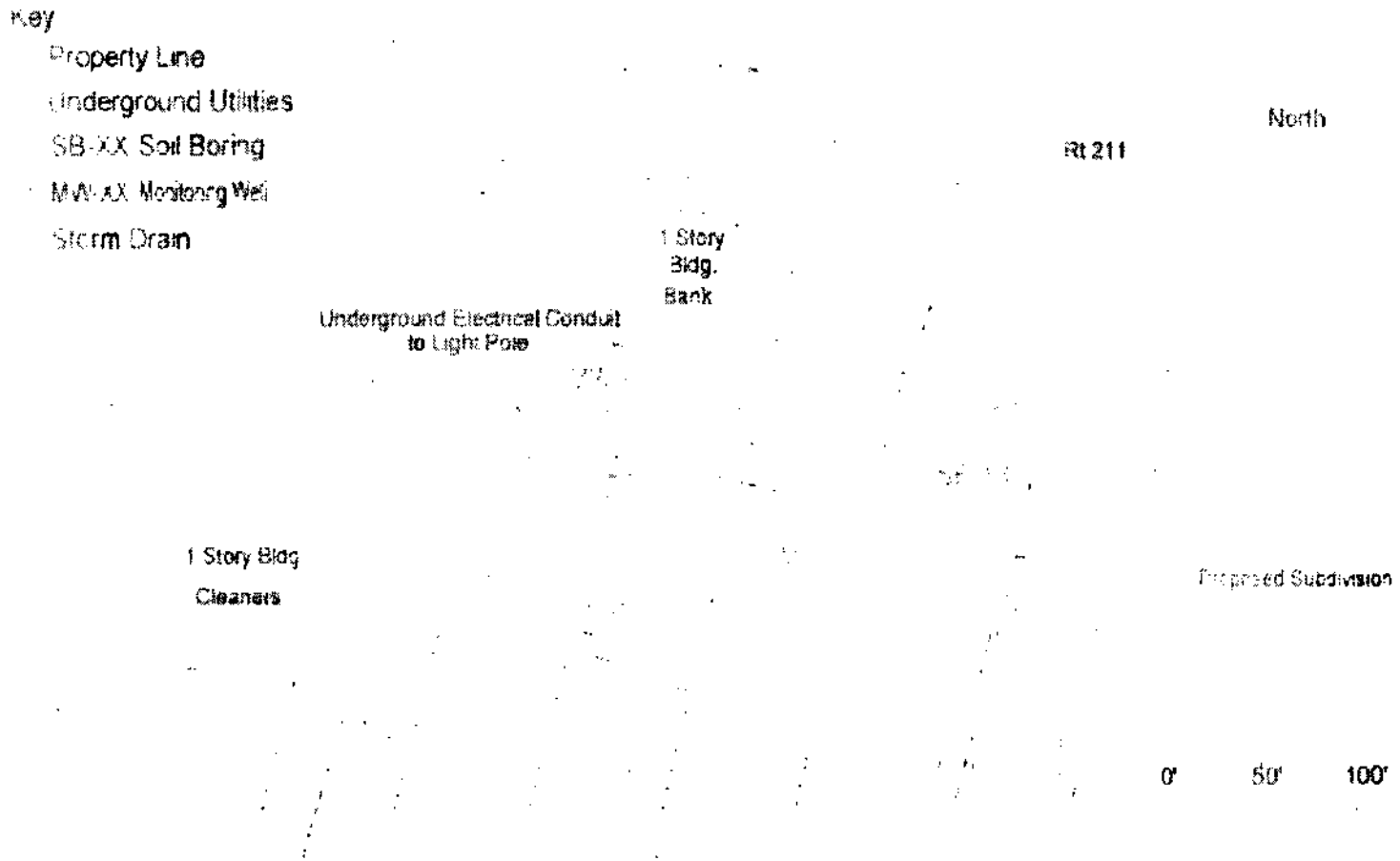



Figure 1· Site Location Map
USGS 7.5 Minute Quadrangle: Middletown, NY
American Cleaners at Caldor Lloyds Mall
340 Route 211 East, Middletown, NY 10940
NYSDEC DER VCP V-00601-3, February 22, 2010

**Mid-Hudson Geosciences**
Katherine J. Belmkamer, PhD, CPG #5611
1003 Route 44/55, PO Box 332
Otmondale, NY 12515-0332
(845) 883-6666
rockdoctor@optonline.net




DT Consulting Services, Inc.
1291 Old Post Road
Ulster Park, New York 12487
(845) 658 3484

Client: Wallkill Acquisitions, LLC

Location: Caldor Plaza, 360 Route 211 East, Middletown, New York

Title: Site (base) Map - Proposed Subdivision

Scale: Graphic Drawn By: O ! Spill No: N/A Fig #: 2

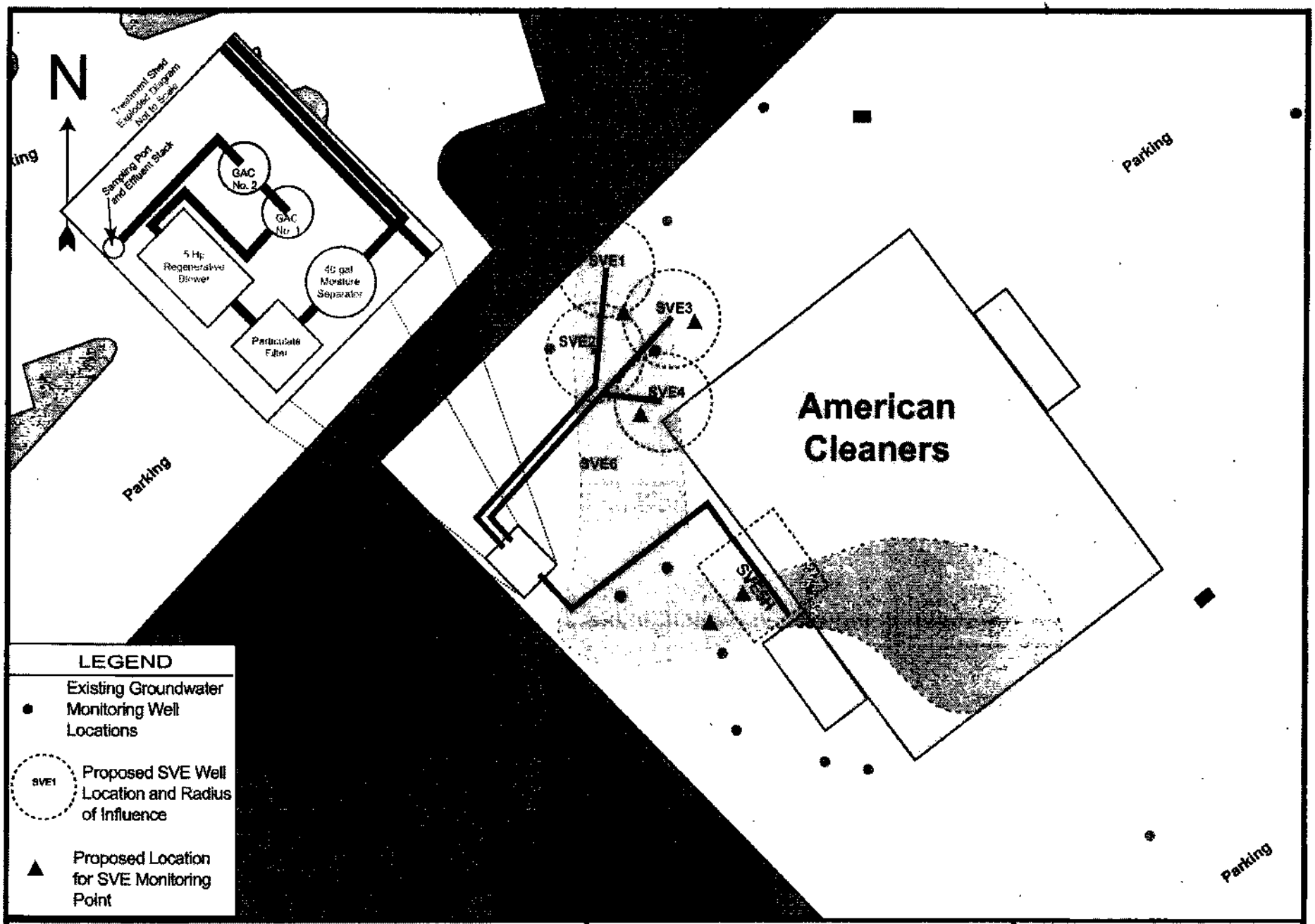



Figure 3
Location of Phase I - SVE Design Elements

American Cleaners at Caldor Lloyds Mall
340 Route 211 East, Middletown, NY 10940
NYSDEC DER VCP V-00461, Nov 2011

GEOVATION
Geovation Engineering, P.C.
2016 Route 284
Slate Hill, NY 10921