

DECISION DOCUMENT

Carmel Shop-Rite Plaza
Voluntary Cleanup Program
Carmel, Putnam County
Site No. V00104
December 2011



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

DECLARATION STATEMENT - DECISION DOCUMENT

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Voluntary Cleanup Program
Carmel, Putnam County
Site No. V00104
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Statement of Purpose and Basis

This document presents the remedy for the Carmel Shop-Rite Plaza 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 the Carmel Shop-Rite Plaza site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

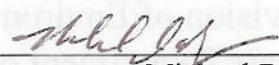
During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternatives analysis (AA). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site.

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.

12/6/11
Date


Michael Ryan, Director
Remedial Bureau C

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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 resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. 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 (RI) or alternative analysis (AA). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action is the selected remedy. A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This DD identifies the IRM(s) conducted and discusses the basis for No Further Action.

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 repository:

Reed Memorial Library
Attn: Jeanne Buck
1733 Route 6
Carmel, NY 10512

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: The Carmel Shop-Rite Plaza site is approximately 19 acres and is located at 180 Gleneida Avenue in the town of Carmel, Putnam County, NY.

Site Features: The site contains three one-story buildings and asphalt paved parking areas. Landscaped areas are located throughout and around the perimeter of the site. A stormwater retention basin is located at the southeast corner of the site.

Current Use(s): The site is zoned commercial. The two main buildings on the site are currently used as a shopping center with a variety of retail and commercial tenants. A savings bank occupies the third building located on the site. Gleneida Avenue (Route 52) abuts the western portion of the site boundary. Residential and commercial properties are located northwest and southwest of the site. A cemetery is located further west of the site and Route 52. Undeveloped woodland and wetland areas abut the site to the north, south and east.

Historical Use(s): A dry cleaning facility, which used tetrachloroethene (PCE) in its dry cleaning operations, was formerly a tenant at the site.

An initial remedial action was performed at the site in 1995, which included the excavation and removal of approximately 36 tons of PCE impacted soil from an area immediately east of the dry cleaner tenant space.

Site Geology and Hydrogeology: The site, like most of Putnam County, is underlain by a northeast-trending mass of an undifferentiated gneiss and granite bedrock formation. Bedrock is found at a depth ranging from approximately 2 to 4 1/2 feet below grade within the vicinity of the former dry cleaner. Bedrock slopes downward to the southeast (bedrock depth 5-10'), to the south (bedrock depth 60') and to the north (bedrock depth 20'). Bedrock also slopes downward to the west-southwest. The groundwater at the site flows to the southeast. The depth of groundwater ranges from approximately 7 to 15 feet below grade.

The site slopes to the south from approximately 580 to 550 feet above mean sea level. According to the Town of Carmel, potable water is supplied to the site from Lake Gleneida, which is

located approximately 3,500 feet south-southwest of the site.

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 commercial use (which allows for industrial use) as described in DER-10, Technical Guidance for Site Investigation and Remediation were/was evaluated.

A comparison of the results of the investigation 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 Volunteer. If the Volunteer elects not to complete the remedial program under the VCP, the Department will make a determination if the site poses a significant threat to human health and the environment. If the site is determined to pose a significant threat, the Department will approach the potentially responsible parties (PRPs) to implement the remedy. PRPs are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

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 6.4.

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 Information

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- indoor air

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 at this site is/are:

tetrachloroethylene (PCE)

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

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.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM - Soil Excavation

In October 2001 13 tons of PCE impacted soil was excavated from beneath the concrete slab in the storage area of the former dry cleaner. Based on confirmatory soil samples, additional PCE impacted soil was excavated from the western sidewall of the excavation in 2002. Structural constraints prevented additional impacted soil from being excavated from the southern sidewall of the excavation, beneath the foundation area of the adjacent retail space. Confirmatory soil samples collected at the completion of the IRM from the western and southern sidewalls of the excavation revealed PCE at concentrations of .045 parts per million (ppm) and 7.5 ppm, respectively.

IRM - Soil Vapor Mitigation

A soil vapor extraction (SVE) system was installed in January 2002 beneath the slab of the former dry cleaner tenant space, which was then transformed into a sub-slab depressurization system (SSDS) in September 2005. The SSDS was upgraded in March 2006 by replacing the existing fan with a 1 1/2 horsepower blower.

In addition to the original SSDS that was installed to mitigate exposures to soil vapors from residual soil contamination, four additional SSDSs were installed in March 2010 in three tenant spaces and the existing SSDS was upgraded with a more effective fan. These SSDSs mitigate the potential for soil vapor intrusion into the tenant spaces adjacent to the former dry cleaner.

6.3: 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*.

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Direct contact with residual contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. Volatile organic compounds in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into 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. Sub-slab depressurization systems (systems that ventilate/remove the air beneath the building) have been installed in a portion of one of the three on-site buildings to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the building. Sampling indicates that soil vapor intrusion is not a concern for the remaining two on-site buildings and off-site buildings.

6.4: 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 upon investigations conducted to date, the primary contaminants of concern at the site include volatile organic compounds (VOCs) associated with the former dry cleaning operations. In particular, tetrachloroethene (PCE) has been detected in soils and groundwater; although the levels of this contamination have been significantly reduced since contaminated soil was excavated. The removal of the source has allowed natural attenuation of the impacted groundwater to occur. PCE concentrations in downgradient wells MW-8 and MW-9 have decreased from 140 ppb and 68 ppb, respectively in 2002 to 47 ppb and 33 ppb, respectively in 2008.

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:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

Soil

RAOs for Public Health Protection

- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

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

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department is proposing No Further Action with continued operation of the sub-slab depressurization systems (SSDs) to treat residual soil vapor contamination and the implementation of institutional and engineering controls (IC/EC: deed

restriction and SSDSs) as the proposed remedy for the site. The Department believes that this remedy is protective of human health and the environment.

The elements of the institutional and engineering controls are listed below.

1. Imposition of an institutional control in the form of a deed restriction for the controlled property that:

- a. requires the property 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), though 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 Department, NYSDOH or County DOH;
- d. prohibits agriculture or vegetable gardens on the controlled property; and
- e. requires compliance with the Department approved Site Management Plan.

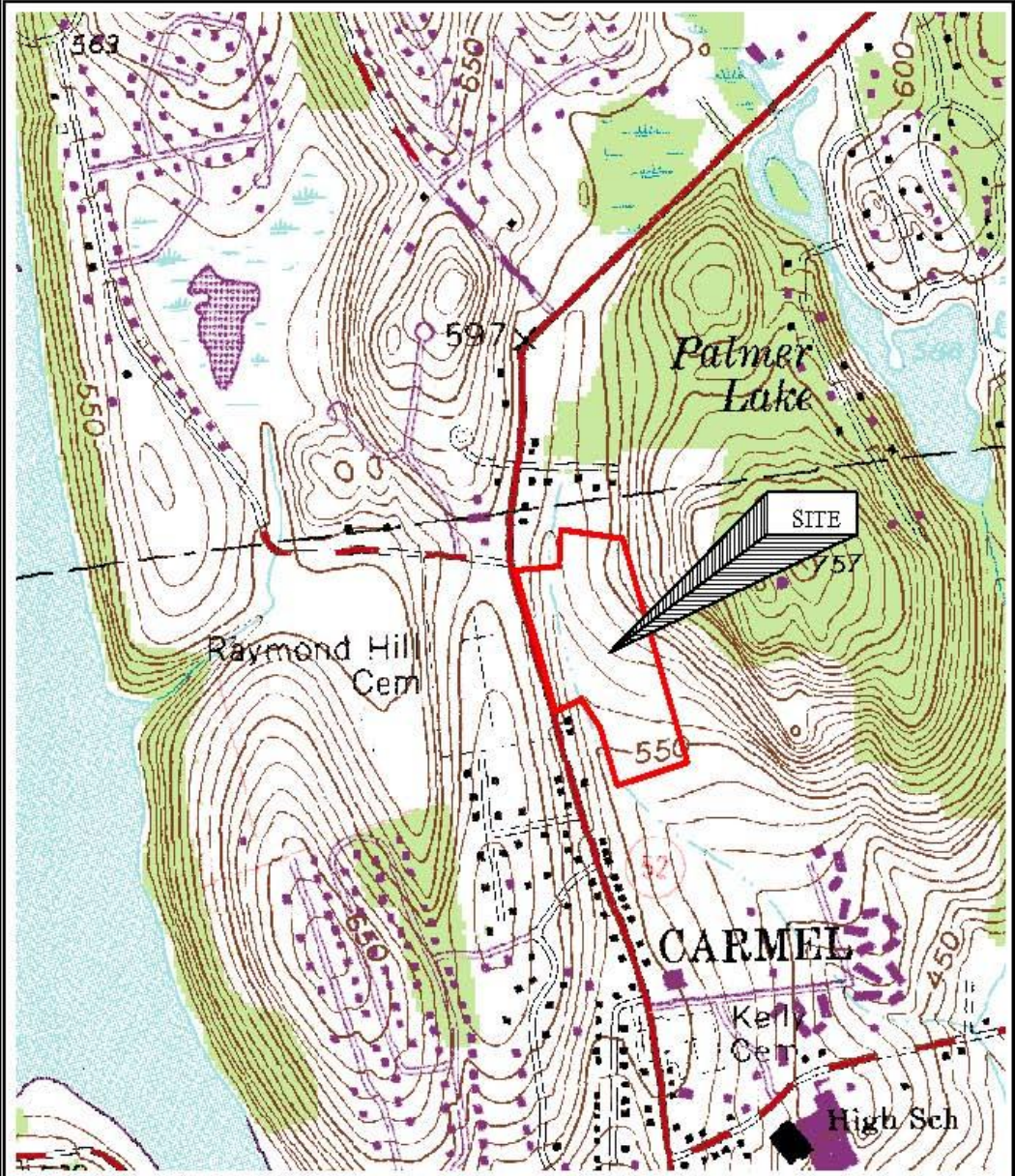
2. A Site Management Plan is required, which includes the following:

- 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:

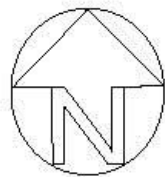
Institutional Controls: The Deed Restriction for the controlled property discussed previously; and
Engineering Controls: The continued operation of the SSDSs discussed above.

This Institutional and Engineering Control Plan includes, but may not be limited to:

- i. an excavation plan which details the provisions for management of future excavations in areas of remaining contamination;
 - ii. descriptions of the provisions of the deed restriction;
 - iii. a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - iv. provisions for the management and inspection of the identified engineering controls (i.e., the SSDSs);
 - v. maintaining site access controls and Department notifications; and
 - vi. the steps necessary for the periodic reviews and certification of the institutional and engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- i. monitoring of the SSDSs to assess the performance and effectiveness of the remedy; and
 - ii. a schedule of monitoring and frequency of submittals to the Department.



USGS Topographic Map
Lake Carmel, New York Quadrangle
Contour Interval: 10 feet



SITE LOCUS MAP

Carmel Shop Rite Center
180 Gleneida Avenue
Carmel, New York

SCALE: AS SHOWN

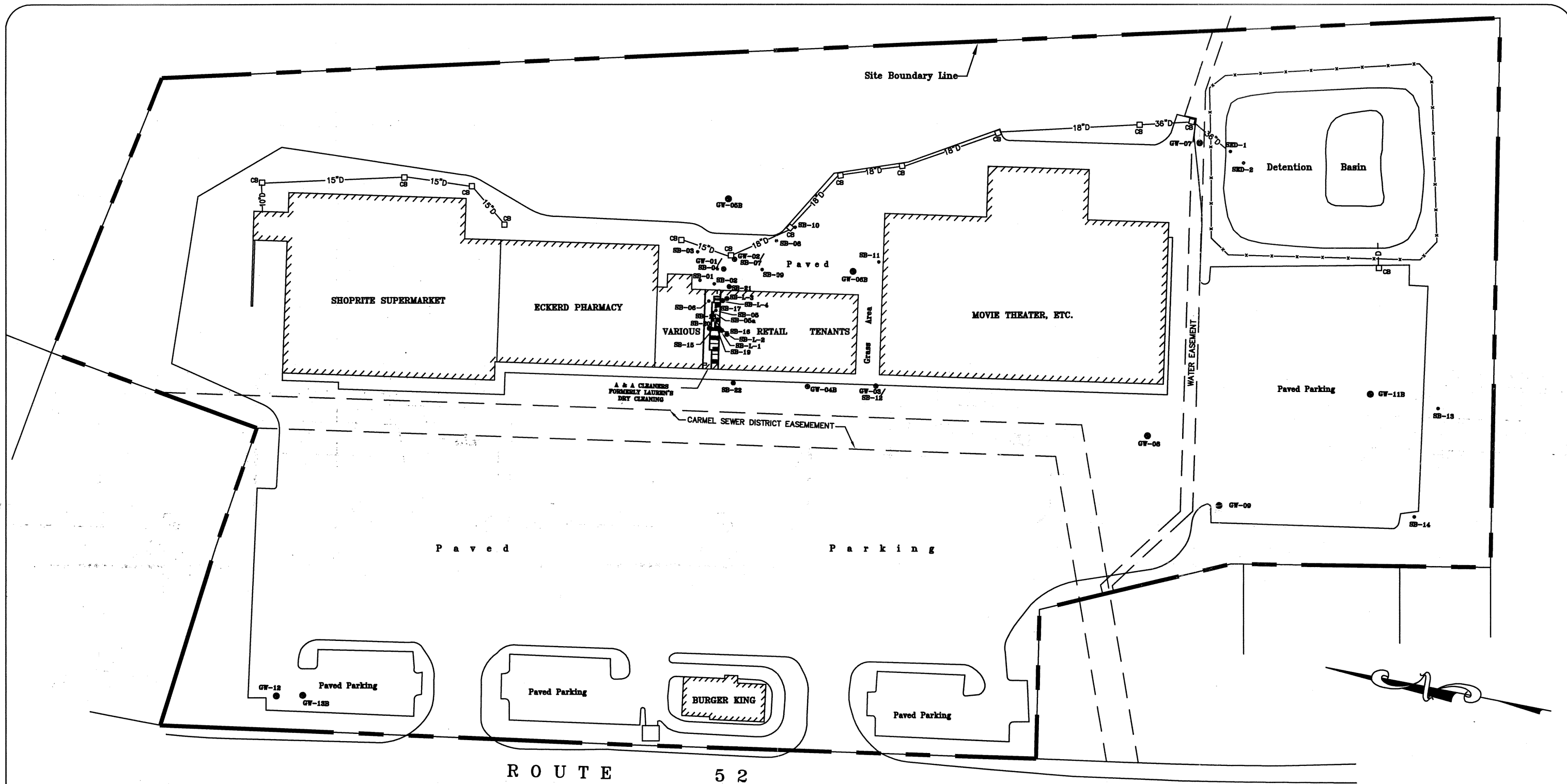
June 5, 2006

VERTEX Proj. No. 4148

VERTEX

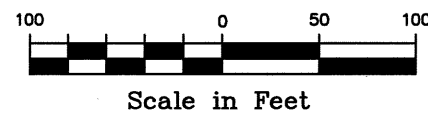
ENVIRONMENTAL SERVICES
FIGURE NO. 1

Figure 4.4148SS.dwg



LEGEND

- SB-01 ● McLaren Hart Boring Location
- SB-17 ⊙ Vertex Boring Location
- GW-01 ⊕ McLaren Hart Monitoring Well Location
- GW-05 ⊕ Vertex Monitoring Well Location
- ⊙ Drain Manhole
- Catch Basin
- 15\"/>



Scale in Feet

Note:

This figure was compiled using the following sources:

"Site Plan" Town of Carmel Putnam County, New York, Proposed Expansion at the Nichols Plaza Shopping Center, Route 52; Sheet 2 of 3, dated 1/15/94, revised 2/1/94, by J. Robert Folchetti & Associates.

"Sampling Location Map" of Carmel Shop-Rite Center by McClaren Hart, Inc. dated 01/24/00.

SAMPLE LOCATIONS SCHEMATIC

Carmel Shop-Rite Center
Town of Carmel
Putnam County, New York

SCALE: 1" = 100'

DATE: June 5, 2006

VERTEX PROJ. 4148

VERTEX

Environmental Services, Inc.

FIGURE NO. 2