



June 28, 2006

**New York State Department Of Environmental Conservation**

Division of Environmental Remediation – Region 1  
SUNY - Building 40  
Stony Brook, NY 11790

Attention: Jamie Ascher  
Engineering Geologist 2

**Re: Site Management Plan  
The Citizens Development Company / Flower Fashion Site  
47 Northern Blvd., Great Neck, New York, Operable Unit 2 - Site #1-30-070**

Dear Mr. Ascher:

Enclosed please find our Site Management Plan for the above-referenced Site. Please do not hesitate to call our office if you have any questions regarding this document.

Sincerely,

**CARICH CONSULTANTS, INC.**

  
Steve Sobstyl

Project Manager



Eric A. Weinstock  
Associate

Enclosure

cc: Miriam Villani, Esq.  
Sal Panico  
Rosalie Rusinko  
Jacqueline Nealon, NYSDOH  
F. William Schmergel

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### FIGURE

1. Site Area Map



## **SITE MANAGEMENT PLAN**

**The Citizens Development Company / Flower Fashion Site  
47 Northern Blvd., Great Neck, New York  
NYSDEC Site #1-30-070**

### **1.0 Introduction & Background**

The following Site Management Plan ("Plan") has been prepared by CA RICH Consultants, Inc. ("CA RICH") on behalf of the Citizen Development Company ("CDC") for the former Flower Fashion Site. The current tenant occupying the building is a "Cingular" cellular telephone store. Previous tenants included: an AT&T Wireless store, a florist and a dry cleaner. A Site area map is presented in Figure 1.

The purposes of this Plan is threefold and includes: 1) a description of how the existing remediation equipment will be operated and maintained; 2) the protocols for Site monitoring; and 3) an outline that defines the procedures that will be employed to manage the institutional and engineering controls for the Site.

During the Fall/Winter of 2004 and Spring 2005, the IRM activities that were completed at the Site included the removal of soil from the rear area of the Site that was contaminated with tetrachloroethene ("PCE"), the installation of a series of shallow and deep sodium permanganate injection wells and the installation of a soil vapor extraction ("SVE") system. A detailed description of the IRM activities is presented in the Interim Remedial Measures Report – Part A (Ref. 1) and Interim Remedial Measures Report – Part B (Ref. 2).

### **2.0 Operations and Maintenance of Existing Equipment**

Currently there are three mechanisms in place at the Site that continue to remediate subsurface soil and groundwater contamination which include a SVE system, sub-slab depressurization system and In-situ Chemical Oxidation.

#### **2.1 SVE system**

The existing SVE system at this site consists of 3 horizontal and 5 vertical soil vapor extraction wells located behind the building where PCE impacted soil was excavated and replaced with clean imported sand. The soil vapor is extracted using a Fuji Model VFC600A, 4½-horsepower blower located in the equipment storage shed. The soil vapor passes through a moisture knock-out drum, into the blower and flows through a series of two 150 pound, vapor-phase carbon units located inside of the shed.

The following operations and maintenance procedures apply to the individual components of the SVE system are a follows:

## **SVE Blower**

### Monthly

- Check the vacuum gauge at the inlet and record value.
- Clean the inside and outside of the cooling fan.

## **Moisture Knock-Out Drum**

- The water level in the drum should be checked once a month. Turn off the power to the blower, place a container in front of the drain valve at the bottom of the drum and open the drain valve. If water flows out of the drum, the drum should be drained and the water stored in a suitable plastic container with a water-tight lid. The system can then be restarted. Contact CA RICH to arrange for the proper disposal of the water.
- The moisture knock-out drum contains an air filter to prevent sediment from entering the blower. The filter should be checked every 6 months or after a significant increase in the measured vacuum at the inlet to the blower is observed. The filter element should be either cleaned or replaced depending on the condition of the element.

## **Vacuum Relief Valve**

- There are no periodic maintenance procedures recommended by the manufacturer.

## **Carbon Canisters**

- The sampling ports on the discharge side of the blower after the carbon filtration units should be monitored quarterly using a Photo-Ionization Detector (PID) such as a MiniRae® 2000 and the values recorded. Once the meter indicates breakthrough of the carbon, CA RICH should be contacted to arrange for replacement of the carbon unit(s).
- There are no periodic maintenance procedures recommended by the manufacturer.

## 2.2 Sub-Slab Depressurization System

Currently, there is a Sub-Slab Depressurization (SSD) system operating in the basement of the existing building. The system consists of a perforated pipe buried beneath the basement floor that is connected to a Fantech® low pressure SSD blower that exhausts extracted soil vapor at a rate of approximately 150 cfm. Indoor air quality tests indicate that the current this system is effectively controlling any PCE vapors inside the building.

Operations and maintenance procedures that apply to the Fantec® low pressure blower includes a physical inspection of the blower to confirm that air is being discharged and that the fan is operating.

### 2.3 In-situ Chemical Oxidation

The application of permanganate directly to subsurface soils and groundwater has been proven successful for the remediation of PCE. A total of 27 permanganate injection points were installed in a grid pattern behind the building. Each of the injection points consists of a 1-inch diameter, flush-threaded, schedule 40 PVC pipe with 0.030-inch slots (30 slot) screens. The two outer rows of injection points were installed with the slotted section set from two to five feet below grade. The middle row of injection points was installed with the slotted section set from 7 to 12 feet below grade. One deep injection point, screened from 35 to 45 feet, was also installed. An existing on-site remediation well was also used in the permanganate injection system. Approximately 1,400 gallons of 5% sodium permanganate was applied to these points.

The shallow injection points are currently not in use and do not require specific operations or maintenance activities. The deep injection points will be used again during the Summer of 2006. No maintenance of the deep points is required.

### **3.0 Monitoring**

The following monitoring programs have been established for this Site and include: groundwater monitoring, soil vapor monitoring and indoor air quality monitoring.

#### 3.1 Groundwater Monitoring

Groundwater at this Site is monitored on an annual basis and includes the sampling and analysis of groundwater from monitoring of wells MW-1A, 1C, 2, 3, 4, 4(75), 4(90) and 4D. This network of monitoring wells was last sampled on December 6, 2005 (Ref. 3). The following outline summarizes the groundwater sample collection procedure and analysis:

- Prior to collection of any groundwater sample, depth to water measurements are obtained from each respective well. Each monitoring well is then purged of a minimum of three well volumes using a properly decontaminated low-flow submersible pump and dedicated polyethylene tubing.
- Upon purging each well, the groundwater samples are collected directly into laboratory issued containers from the pump discharge. Sample containers were labeled to identify client name, monitoring well designation, time and date, and the required analysis. At the time of sample collection, measurements of temperature, pH, specific conductance and dissolved oxygen are also collected. All samples were placed on ice in a cooler and maintained under strict chain-of-custody control documentation.
- The submersible pump is cleaned using an Alconox® detergent solution followed by two freshwater rinses between well sampling. Disposable latex gloves are worn during sample collection and handling.

All groundwater samples, including the required QA/QC samples, are delivered under chain-of-custody control overnight to NYS-certified Laboratory and analyzed for volatile organic compounds (EPA Method 8260) in accordance with NYSDEC ASP Category A or "standard" deliverables.

Termination Criteria - The groundwater monitoring program will be terminated after groundwater standards are achieved or NYSDEC indicates monitoring is no longer required. The final round of groundwater sampling shall include NYSDEC ASP Category B laboratory deliverables.

3.2 Soil Vapor

The soil vapor being extracted by the SVE system is monitored on a monthly basis with a MiniRae 2000® (or equivalent PID) field meter capable of detecting total VOCs. Measurements are taken from sample port located before the carbon treatment units, in between the carbon units and after the carbon unit discharge point. Concentrations of total VOCs are recorded on a clip board stored in the equipment shed.

Confirmatory soil vapor samples are collected on a semi-annual basis using a Summa® air sample canister. This sample is collected from a sample port located prior to the carbon treatment unit and analyzed in accordance with USEPA TO-15 methodology. Graphs of the concentration of total VOCs versus time will be compiled after each round of semi-annual monitoring. Once the levels of total VOCs in the SVE wells decreases to a near constant or asymptotic concentration, operation of the system will be suspended.

Termination Criteria - Three soil borings will then be placed in the rear yard. Soil samples will be collected at 3 to 4 feet below grade in the native soil below the imported fill and analyzed for halogenated volatile organics. If the concentration of PCE and its degradation products in these samples do not exceed the NYSDEC TAGM (Ref. 4) Cleanup Objectives, the SVE blower will be replaced with a smaller SSD blower. If the levels exceed the Cleanup Objectives, the SVE system will be restarted and the monitoring program will continue. The same criteria will be used to determine when additional soil samples should be collected.

3.3 Sub-Slab Depressurization System

Monitoring of the SSD system will consist of checking to confirm that the SSD blowers are operating. A field technician will visit the site in June and December of each year and confirm that there is a flow of air out of each SSD system and that the blowers are functioning.

Termination Criteria -The SSD systems will be terminated when monitoring of the indoor air confirms that there are no impacts to the indoor quality of the Cingular store and the 3 adjoining stores after the SSD blowers have been turned off for a period of 30 days during Winter conditions (see section 3.4).

3.4 Indoor Air Quality

Indoor air samples are collected at the following locations on an annual basis in conjunction with the groundwater sampling event (December).

<u>BUILDING</u>	<u>SAMPLE LOCATION &amp; IDENTIFICATION</u>
CDC/FF Site (Cingular Store) 47 Northern Blvd.	Ground Floor and Basement (Sample ID: PDM-1 and PDM-2)
Health Nut Store 45 Northern Blvd.	Ground Floor (there is no basement) (Sample ID: PDM-3)
Cambridge Educational Center 55 Northern Blvd.	Basement (waiting room and NW Test Center) (Sample ID: PDM-4 and PDM-5)
Outdoor Ambient Air	Behind Site Building (Sample ID: PDM-6)

New 3M sampling badges are brought out to the Site and exposed for a period of approximately 24-hours. The samples are analyzed by ELAP-approved Galson Laboratories for the analysis of PCE. Monitoring of the indoor air quality at locations PDM-1 through 6 will continue as long as the soil vapor extraction and sub-slab depressurization systems are in operation or the NYSDEC indicates monitoring is no longer required.

Termination Criteria - Once the air quality in the Cingular store and the 3 adjoining stores remains at or below the established NYS background level for PCE (which is currently 10 ug/m<sup>3</sup>) during one round of sampling during the Winter heating season with the SSD system turn off for a period of 30 days, the indoor air monitoring program will be terminated and the site will be eligible for delisting from the Registry.

#### **4.0 Institutional and Engineering Controls (I&ECs)**

The goal of the I&EC portion of this Plan is to describe the procedures that will be employed to manage the institutional and engineering controls for the Site. Specifically, this Plan addresses the following issues:

- Contemplated Use;
- Institutional Controls / Engineering Controls (IC/ECs);
- An Assurance of the Engineering Controls which are part of the Remedy;
- Certification of the IC/ECs; and
- Provisions for the Continued Use, Reuse or Redevelopment of the Site within the Constraints of the Remedy.

Each of these items is addressed in detail in the following sections of this report.

#### **4.1 Contemplated Use**

The Property is currently zoned industrial/commercial and the reasonable, foreseeable use of the Property in the future will remain industrial/commercial.

#### **4.2 Institutional Controls**

Two institutional controls will be implemented for the site: 1) a deed restriction; and 2) groundwater beneath the Site cannot be used for potable or industrial purposes without treatment unless first obtaining permission to do so from NYSDEC. The property owner will implement these two institutional controls unless some extenuating circumstances arise. CA RICH expects that the remedial excavations, chemical oxidation applications and SVE system operation will remediate the Site to NYSDEC requirements.

#### **4.3 Engineering Controls**

Volatile organic compounds were detected in the underlying soil vapor and groundwater. To address these issues, an on-site treatment system was installed to serve as an engineering control. Specifically, a soil vapor extraction (SVE) and sub-slab depressurization (SSD) system were constructed and operates at the Site.

#### 4.4 Assurance of the Engineering Controls which are Part of the Remedy

Assurance of the engineering controls developed for this Site will be achieved using a combination of site inspections, monitoring and annual certification.

A vacuum gauge located in the equipment shed will be monitored on a monthly basis. A log of the readings will be maintained in the equipment shed.

Annually, the Site groundwater wells and IAQ locations will be sampled. In addition, the raw air from the SVE system will also be sampled with a PID on a monthly basis with confirmatory air samples collected with a SUMMA® air sample canister semi-annually. These samples will be analyzed as described in the OM&M Plan. The results will be submitted to the NYSDEC in the form of an Annual Monitoring Report.

As described below, the operation of the treatment system will be inspected and certified on an annual basis by a Professional Engineer (or qualified environmental professional). December of each year will represent the end of a one year certification period. In that regard, the annual monitoring report will also include a certification of the remediation system.

#### 4.5 Certification of the Institutional Controls / Engineering Controls (IC/ECs)

On an annual basis, a professional engineer (or qualified environmental professional) will review this Plan and the most recent monitoring data. Based on the trends of the data, an evaluation will be made as to the effectiveness of the system in removing VOCs for the underlying soil. Should the review indicate that a modification to the system is necessary – the appropriate adjustments will be made. The property owner will also be interviewed to confirm that no potable or industrial groundwater supply wells have been installed at the site.

Specifically, the certification will state the ICs and ECs for the project and certify that:

- they are in place and effective;
- they are performing as designed;
- nothing has occurred that would impair the ability of the controls to protect public health and the environment;
- no violations have occurred and there were no failures to comply with the Site Management Plan;
- Site access is available to maintain the engineering controls; and
- there is no groundwater usage at the Site.



#### 4.6 Provisions for the Continued Use, Reuse or Redevelopment of the Site within the Constraints of the Remedy

The Site Management adequately addresses the operational requirements for continued use of this property as an industrial/commercial facility. At this time, there are no known plans for the redevelopment or expansion of this Site. Provisions for the continued use, reuse and potential redevelopment of this Site are addressed below by media.

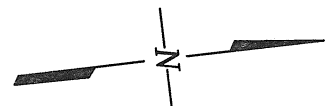
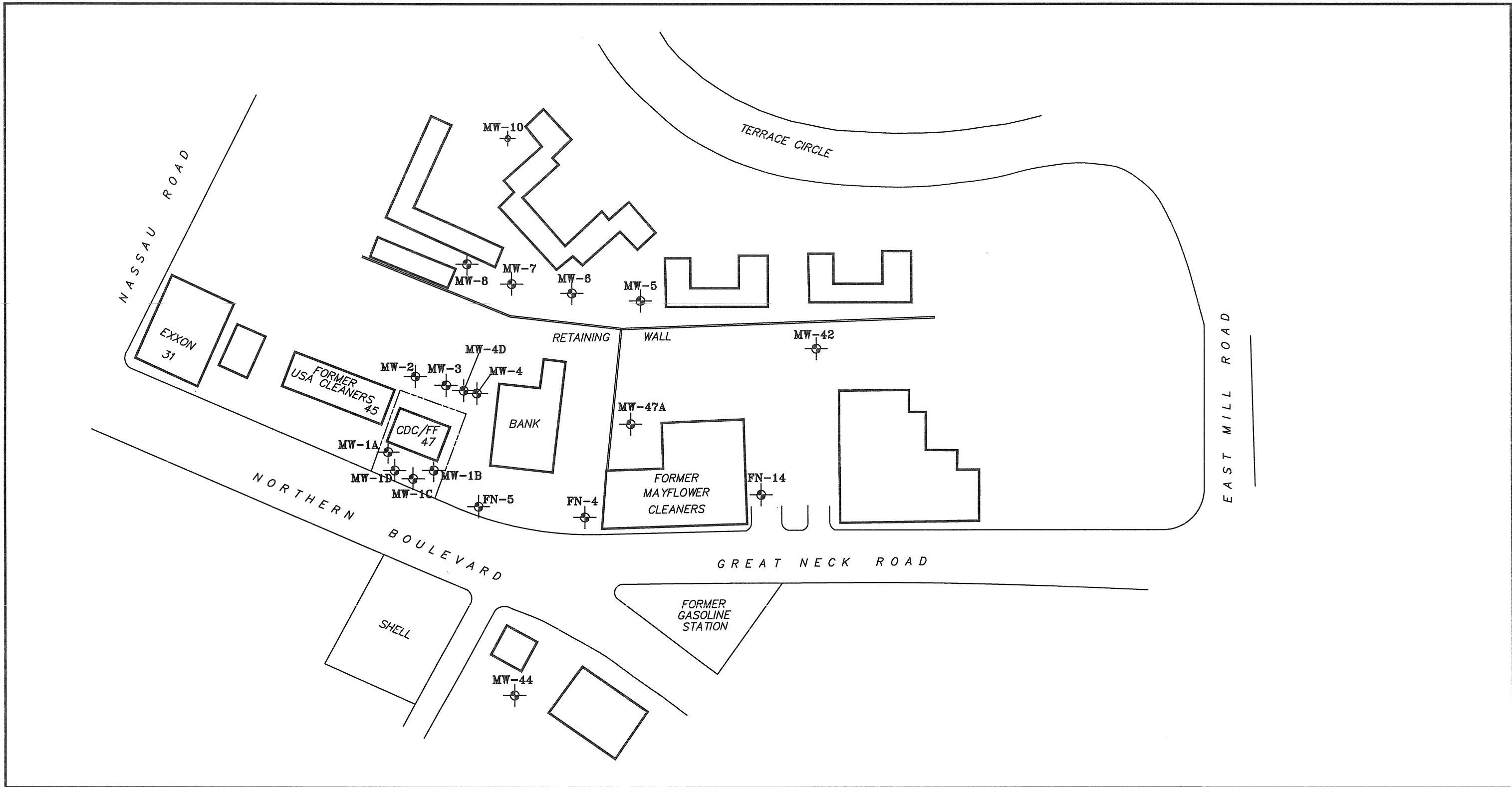
**Soil** - An extensive subsurface investigation was performed as part of the IRM for this Site. All known areas of soil contamination were excavated and disposed of off-site as described in the IRM report – Part A (Ref. 1). As such, no soil-related actions are required for the continued use of the Site. It is possible that future reuse or redevelopment of the site may involve the addition of subsurface utility lines or the installation of additional storm water drains. To ensure that the soil encountered from these activities is properly addressed, soil borings will be placed in the planned excavation areas prior to construction and the soil will be tested for volatile organic compounds (VOCs). The excavated soil will be properly disposed of based on the results of the soil samples.

**Groundwater** – There are currently no future plans to use the groundwater beneath the Site either for potable or industrial purposes. The occupant of the property will not install and operate an on-site supply well unless they obtain permission from the NYSDEC in advance.

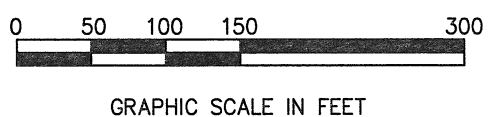
**Soil Vapor** – The operation of the current SVE and SSD systems assure that the VOC vapors in the soil are captured and treated. Once the operation of the SVE system is completed in accordance with the termination criteria outlined in the IRM report and Section 2.0 of this Plan, the systems will be turned off. Upon discussions with the Department, it will be converted to a second on-site SSD and will remain in operation as part of the remedy. The procedures for termination of the SSD systems are included in section 3.3 of this Plan.

## 5.0 REFERENCES

1. CA RICH, (January 2005), Interim Remedial Measures Report – Part A, The Citizens Development Company / Flower Fashion Site, 47 Northern Blvd., Great Neck, New York.
2. CA RICH, (April 2005), Interim Remedial Measures Report – Part B, Final Engineering Report and Operations, Maintenance & Monitoring Plan, The Citizens Development Company / Flower Fashion Site, 47 Northern Blvd., Great Neck, New York.
3. CA RICH, (January 2006), Annual Groundwater and Indoor Air Monitoring Report – December 2005, The Citizens Development Company / Flower Fashion Site, 47 Northern Blvd., Great Neck, New York.
4. NYSDEC, January 24, 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels.
5. NYSDEC, October 22, 1993, Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values.
6. CA RICH, (November 2005), Monitoring Well Installation Work Plan, The Citizens Development Company / Flower Fashion Site, 47 Northern Blvd., Great Neck, New York.



**Legend**  
 ⦿ GROUNDWATER MONITORING WELL



Note:  
 Map adapted from Civil and Environmental Engineers, Inc.  
 Site Area Map dated May 16, 2002.

<b>CA RICH CONSULTANTS, INC.</b>		
Certified Ground-Water and Environmental Specialists 17 Dupont Street, Plainview, New York 11803		
<b>TITLE:</b>	<b>DATE:</b>	<b>SCALE:</b>
SITE AREA MAP	1/29/04	As Shown
<b>FIGURE:</b>	<b>DRAWN BY:</b>	<b>APPR BY:</b>
1	S.T.M.	E.A.W.
<b>DRAWING NO:</b>	CDC/FLOWER FASHION 47 NORTHERN BLVD. GREAT NECK, N Y 11020	
1183-1a		