



August 17, 2007

Michael D. MacCabe, P.E.
Senior Environmental Engineer
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7016

Re: **Indoor Air Sampling Plan**
Club East - BCP Site # C231048
Index # A2-0531-1105
421-433 East 13th St. & 420 East 14th St.
New York, New York

Dear Mr. MacCabe:

As per your request, CA Rich Consultants, Inc. is pleased to provide you with the attached Indoor Air Sampling Plan for the above-referenced project. The Plan has been prepared on behalf of the 13th and 14th Street Realty, LLC. and is intended to provide further detail regarding the indoor air sampling activities outlined in the Remedial Action Plan. It also includes details regarding the design and operation of the new building's HVAC system and a complete set of mechanical drawings for the new building. A complete electronic copy of this Indoor Air Sampling Plan is also included for your convenience. This report deliverable is being submitted in accordance with the requirements of the Brownfield Cleanup Agreement executed November 15, 2005.

Upon your approval, we will commence with the specified testing as soon as the installation of the exterior windows is complete and the HVAC system is operational. We will notify NYSDEC and NYSDOH 5 business days in advance of any testing to arrange for regulatory oversight. We look forward to NYSDEC's approval of the Remedial Action Plan and Indoor Air Sampling Plan.

If you have any questions, please do not hesitate to call us, immediately.

Respectfully submitted,

CA RICH CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read 'Stephen Malinowski'.

Stephen Malinowski
Project Manager

STM/CAR/ds

cc: Dawn Hettrick - NYSDOH (Hard copy and PDF Format)
Robert Kaliner, 13th and 14th Street Realty, LLC.
Lawrence P. Schnapf, Esq.

Attachments



INDOOR AIR SAMPLING PLAN

"CLUB EAST"
BCP Site # C231048
Index # A2-0531-1105
421-433 E. 13th St. & 420 E. 14th St., New York, NY 10009

August 2007

Prepared for:

13TH AND 14TH STREET REALTY, LLC
P.O. Box 1073
New York, NY 10276

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803
(516) 576-8844

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- B. CELLAR PLAN

INDOOR AIR SAMPLING PLAN

"CLUB EAST"

BCP Site # C231048 - Index # A2-0531-1105**1.0 INTRODUCTION**

The following Indoor Air Sampling Plan was prepared by CA Rich Consultants, Inc. (CA RICH) of Plainview, NY on behalf of the redeveloper 13TH & 14TH STREET REALTY, LLC for the property located at 421-433 East 13th Street & 420 East 14th Street (the "Site" or "Property") in Manhattan.

The purpose of this document is to provide further details regarding the timing and procedures pertaining to the indoor air sampling activities outlined in the Remedial Action Plan dated July 11, 2007. In addition, as requested by NYSDOH, we have included details regarding the design and operational status of the new building's HVAC System. The contaminants of concern are tetrachloroethene (*also known as perchloroethylene or PCE, a common dry cleaning solvent*) and PCE degradation byproducts (trichloroethene, dichloroethene, and vinyl chloride). All previous groundwater, soil and soil vapor sampling locations and analytical results have been summarized in the February 15, 2007 Revised Remedial Investigation Report.

2.0 PHYSICAL SITE CHARACTERISTICS

The Site is located at 421-433 East 13th Street and 420 East 14th Street and is situated along and between the north side of East 13th Street and the south side of East 14th Street midway between First Avenue to the west and Avenue A to the east (see Figure 1). The neighborhood is referred to as the East Village in lower Manhattan, New York. This area is now a rapidly evolving commercial and residential neighborhood with the relatively large residential apartment complex known as Stuyvesant Town situated directly to the north.

The Property consists of approximately 16,827 square feet of urban land. The Site was formerly occupied by 100-year old adjoining one-story, two-story, and three-story buildings that were demolished in October 2005. After the removal of the buildings, all on-site soils were excavated and removed to a depth of approximately 15-feet below grade and 3-feet into the shallow groundwater table. The excavation successfully removed all on-site soils containing levels of the contaminants of concern above applicable NYSDEC regulations. Following the soil removal construction of the new buildings foundation began with the installation of a waterproof/vapor barrier across the entire bottom of the Site and up around the outside of the new building's foundation to street level. Construction of the new residential building commenced after installation of the foundation.

INDOOR AIR SAMPLING PLAN**"CLUB EAST"****BCP Site # C231048 - Index # A2-0531-1105**

Construction of the new building is nearing completion and post remedial indoor air sampling is planned to verify the effectiveness of the remediation. The sampling event will be scheduled as soon as the exterior windows are installed and the HVAC system is fully operational (estimated September 2007). The HVAC system consists of main units for the common areas of the building as well as smaller units in each of the individual residential spaces. A Site Plan depicting the layout of the new building's basement is included as Figure 2. A complete set of mechanical drawings is included as Appendix A in the hard copy of this Report submitted to the NYSDEC, NYSDOH and the document repository established for this Site.

3.0 CHEMICAL INVENTORY

The building is undergoing construction and different industrial products such as paints and finishes are being utilized to finish the building interior. As such, a comprehensive product inventory will be developed by CA RICH with the assistance of the Construction Manager, Hudson Meridian Construction Group (Hudson). The inventory will consist of both products identified during a Site inspection and products included in construction material lists to be provided by Hudson. The chemical inventory will be performed prior to the indoor air testing to identify any items that may contain chlorinated solvents that could affect the indoor air test results.

4.0 POST-REMEDIAL SOIL VAPOR SAMPLING

To confirm that the soil excavation and waterproof/vapor barrier are effective as the final remedy for this Site, indoor air and post-remedial soil vapor sampling will be conducted in accordance with NYSDOH's Guidance for Evaluating Soil Vapor Intrusion (Ref. 1). During on-site construction activities VMP-2 and VMP-3 were destroyed. As part of the sampling program, two (2) new vapor monitoring points will be installed near the original location of VMP-2 and on the western portion of the sidewalk on East 13th Street. These new vapor monitoring points identified as VMP-2a and VMP-4 will be installed with hand-tools through the existing sidewalk or ground surface. The points will be constructed of ¼-inch diameter polyethylene tubing connected to a stainless steel sampling screen. The screen will be set to collect soil vapor from three feet below the surface. The soil vapor point locations are illustrated on Figure 3. A diagram detailing the construction of the soil vapor points is included as Figure 4.

INDOOR AIR SAMPLING PLAN**"CLUB EAST"****BCP Site # C231048 - Index # A2-0531-1105**

Approximately 48 hours after the installation of the vapor points, we plan to return to the Site to collect soil vapor samples from the two newly-installed points as well as location VMP-1 located beneath the sidewalk on the opposite side of East 13th Street. As stated above, the sampling will be performed in accordance with NYSDOH's Guidance for Evaluating Soil Vapor Intrusion. Prior to the collection of any samples each vapor point will be purged with a low flow vacuum pump to withdraw at least three volumes of the sampling tube. The tubing will then be connected to a pre-cleaned and pre-evacuated sample canister (i.e., 6-litre Summa canister) equipped with a "T" connection. A helium tracer gas will be introduced into a closed environment above the vapor point. A helium meter will be connected to one end of the "T" connection to confirm that the ambient air and the soil vapor below are sealed apart.

Once the seal is verified, the sample canister and regulator numbers and starting gauge pressure will be recorded for each location and the flow controller will be opened to collect the soil vapor sample. After a sample collection of period of approximately 2-hours elapses, the final gauge pressure will be recorded, the flow control valve will be closed, the regulator/gauge assembly will be removed, and the labeled sample will be shipped back to a NYS-certified laboratory for chemical analysis. Chemical analysis will include volatile organic compounds by Method T0-15. In addition, one duplicate sample will be obtained from VMP-2a.

5.0 POST-REMEDIATION INDOOR AND AMBIENT AIR SAMPLING

Upon sealing of all the exterior windows and walls of the new Site building and once the HVAC system is operational, indoor air and ambient air sampling will commence. It is envisioned that both the main HVAC units for the common areas and the individual units on the floors requiring testing will be turned on at least 24-hours prior to the sampling event to simulate a natural occupied condition of the building. Indoor air samples will be collected from each of the four individual basement apartments, the retail basement on E. 14th Street, on the first floor of each of the E. 13th Street and E. 14th Street buildings, and on the top floor near the main elevator for a total of eight samples. Ambient air samples will be collected from the roof, the garden area (above the former "rear yard"), and in front of the new building on E. 13th Street via 6-liter Summa Canisters. The recommended sample locations are illustrated on Figure 5. A Cellar Plan prepared by the Owner's architect depicting the layout of the lowest level is included Appendix B.

INDOOR AIR SAMPLING PLAN**"CLUB EAST"****BCP Site # C231048 - Index # A2-0531-1105**

The sample collection procedures are similar to those described for the soil vapor samples except the helium tracer gas step is not necessary since all samples will be collected within the breathing zone (4-6 feet high). One other difference is that the Summa canisters will be equipped with flow controllers set to collect samples over a 24-hour period. All indoor air and soil vapor samples will be analyzed by a NYS-certified laboratory for volatile organic compounds via EPA Method TO-15. A duplicate sample will be collected from the basement apartment closest to the former "rear yard" for quality assurance purposes.

A site-specific Quality Assurance Project Plan (QAPP) has been prepared for the sampling and is included as Appendix B of the Remedial Action Plan. All data generated under this Indoor Air Sampling Plan will be validated by a third party and the requisite Data Usability Summary Report (DUSR) will be prepared to confirm the results are accurate and precise.

6.0 Reporting

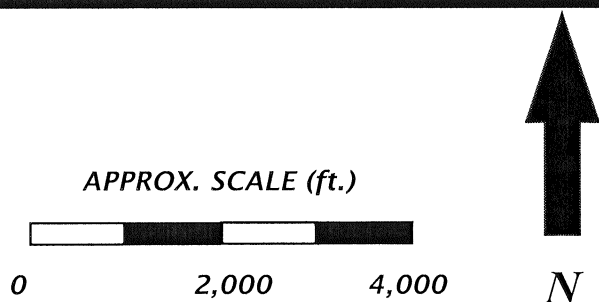
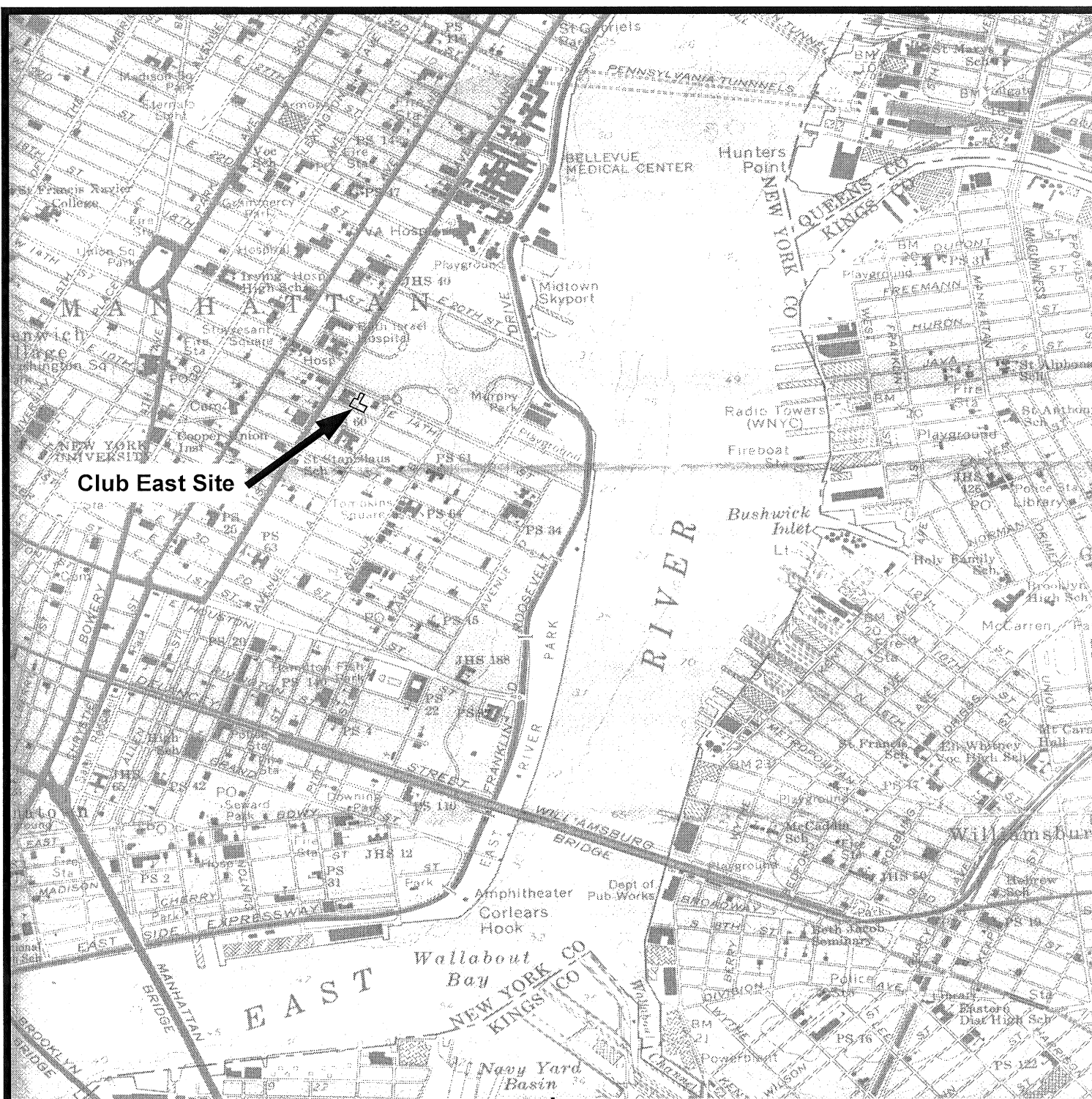
Upon receipt of the DUSR, a Final Engineering Report will be prepared and signed by a Certified Professional Engineer. The Report will include a description of all work performed, including analytical results, summary tables, maps, and an "as built" drawing of the water/vapor barrier; and Final drawings of the newly-constructed building.

In addition to the Final Engineering Report, a Site Management Plan (SMP) will be prepared. This Plan will include an Operations, Maintenance & Monitoring (OM&M) Plan. It will also include an Institutional and Engineering Control (I&EC) Plan which will describe the institutional and engineering controls required as part of the remedy and a recommended inspection schedule, if required.

7.0 REFERENCE

1. NYSDOH, October 2006, Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

Figures



*Adapted from USGS 1969-1979 (photorevised)
Brooklyn Quadrangle Map.*

CA RICH CONSULTANTS, INC.

Certified Ground Water and Environmental Specialists
17 Dupont Street, Plainview, NY 11803

TITLE:

PROPERTY LOCATION MAP

DATE:

4/7/06

SCALE:

AS SHOWN

FIGURE:

1

**13th and 14th Street Realty
421-433 East 13th Street
and 420 East 14th Street
New York, NY 10009**

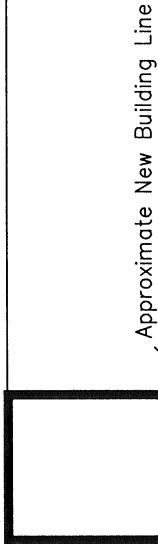
DRAWING:

DRAWN BY:
S.T.M.

APPR. BY:
C.A.R.

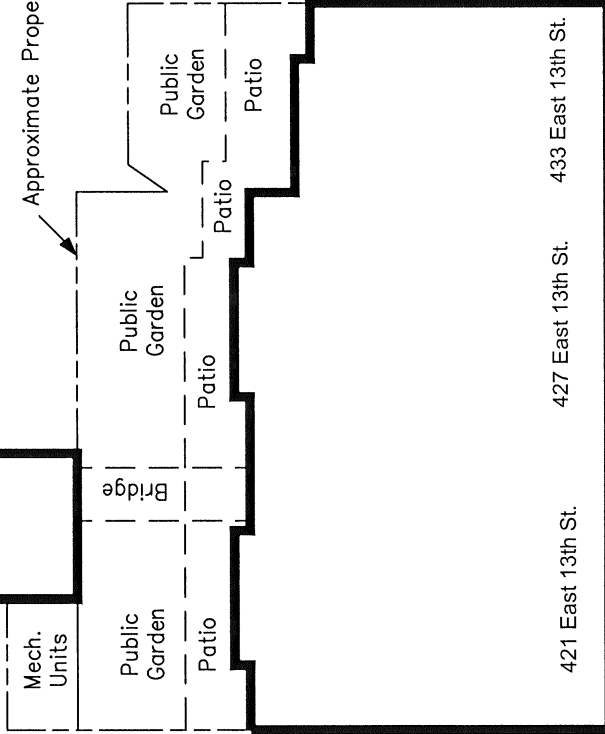
East 14th Street

Sidewalk



420 E 14th St

Approximate Property Boundary



Mech. Units

Public Garden

Patio

Bridge

Public Garden

Patio

Public Garden

Patio

421 East 13th St.

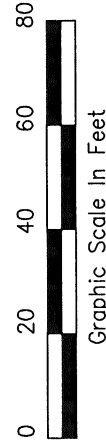
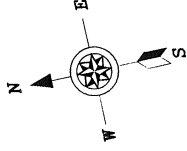
427 East 13th St.

433 East 13th St.

1st AVENUE

Sidewalk

East 13th Street



CA RICH CONSULTANTS, INC.

Certified Groundwater and Environmental Specialists
17 Dupont Street, Plainview, New York 11803

TITLE:

Site Plan
(Basement Level)

DATE:

7/3/07

SCALE:

As Shown

FIGURE:

2

13th & 14th Street Realty
421-433 East 13th Street
& 420 East 14th Street
New York, New York 10009

DRAWING NO:

2005-46AC

APPR BY:

C.A.R.

East 14th Street

Sidewalk

420 E 14th St.

Approximate Property Boundary

421 East 13th St.

427 East 13th St.

433 East 13th St.

1st AVENUE

VMP-3a

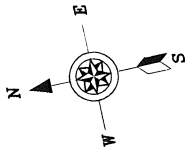
Sidewalk

VMP-2a

East 13th Street

Sidewalk

VMP-1



LEGEND



Proposed Soil Vapor Monitoring Point



Existing Soil Vapor Monitoring Point



Graphic Scale In Feet

AVENUE A

CA RICH CONSULTANTS, INC.

Certified Groundwater and Environmental Specialists
17 Dupont Street, Plainview, New York 11803

TITLE:

Soil Vapor Point Locations

DATE: 7/02/07

SCALE: As Shown

FIGURE: 3

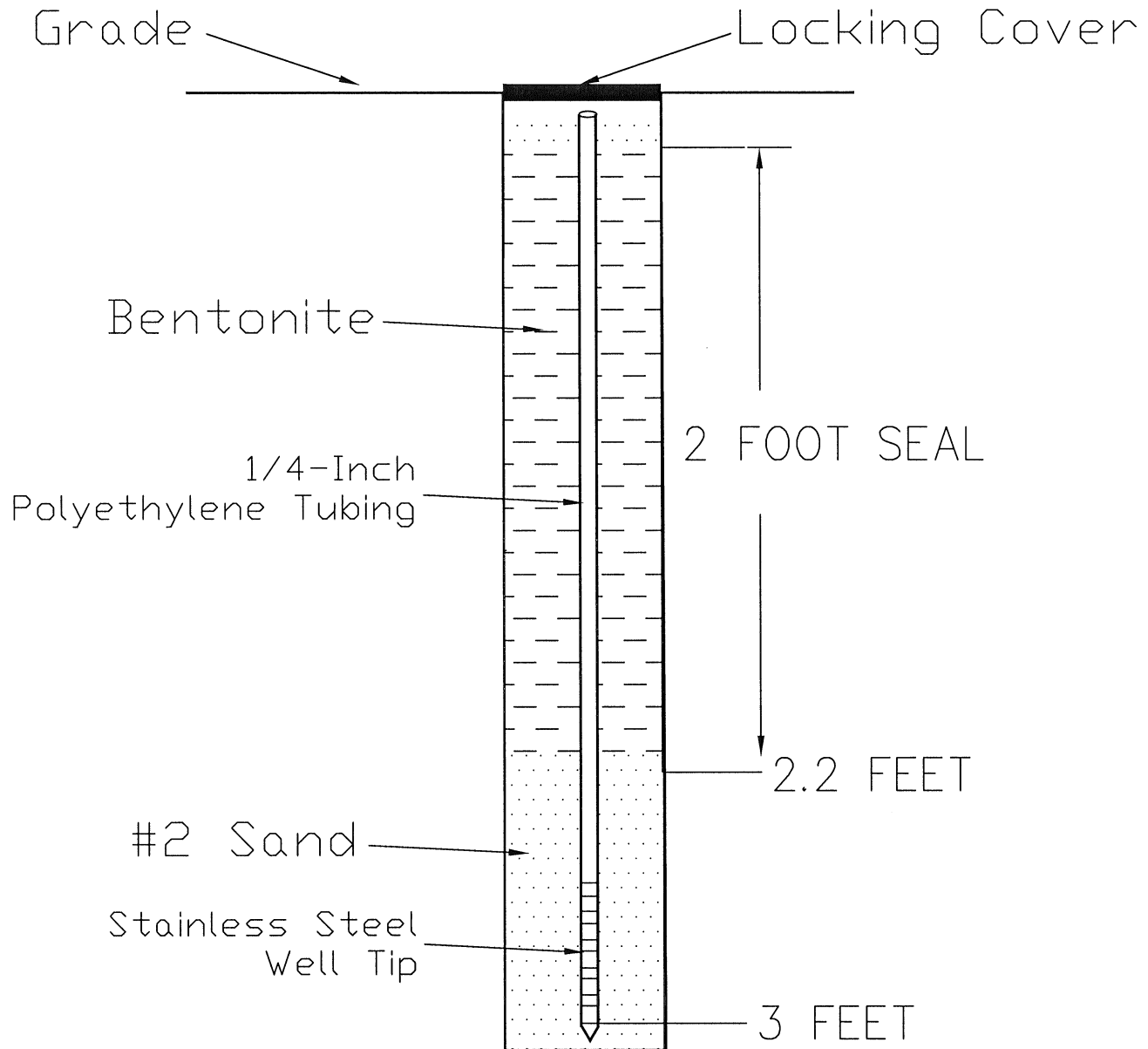
13th and 14th Street Realty
421-433 East 13th Street
and 420 East 14th Street

DRAWING NO: 2007-41a

New York, New York 10009

APPR BY: C.A.R.

VMP-2a & VMP-4



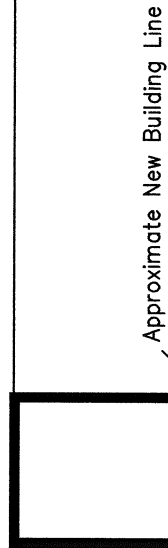
CA RICH CONSULTANTS, INC.

Certified Groundwater and Environmental Specialists
17 Dupont Street, Plainview, NY 11803

TITLE: CONSTRUCTION DETAILS FOR SOIL VAPOR POINTS VMP-2a, & VMP-4		DATE: 8/17/07
FIGURE: 4		SCALE: Not To Scale
DRAWING NO: 2007-42A	13TH & 14TH STREET REALTY 421-433 EAST 13TH STREET & 420 EAST 14TH STREET NEW YORK, NEW YORK	DRAWN BY: S.T.M.
		APPR. BY: C.A.R.

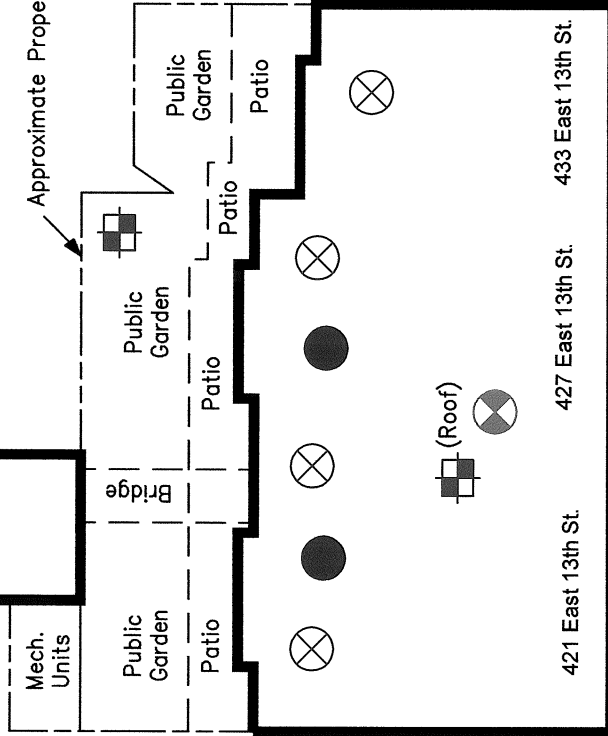
East 14th Street

Sidewalk



420 E 14th St

Approximate Property Boundary



421 East 13th St

427 East 13th St

433 East 13th St

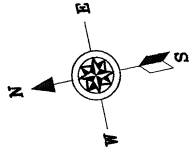
1st AVENUE

Sidewalk







VMP-2a

VMP-4

East 13th Street



LEGEND

-  Proposed Soil Vapor Monitoring Point
-  Existing Soil Vapor Monitoring Point
-  Ambient Air Testing Location
-  Indoor Air Sample In Basement Apartments
-  Indoor Air Sample On First Floor
-  Indoor Air Sample On Top Floor

0 20 40 60 80



Graphic Scale In Feet

CA RICH CONSULTANTS, INC.

Certified Groundwater and Environmental Specialists
17 Dupont Street, Plainview, New York 11803

TITLE	Proposed Indoor Air, Soil Vapor and Ambient Air Testing Locations		DATE	8/17/07
			SCALE	As Shown
FIGURE	5	DRAWN BY: S.T.M.		
DRAWING NO:	2005-46ACC	APPR BY: C.A.R.		
		13th & 14th Street Realty 421-433 East 13th Street & 420 East 14th Street New York, New York 10009		

Appendix A

Mechanical Drawing Set for HVAC System (Attached to Hard copy in Drawing Carrier Tube)

Appendix B

Cellar Plan