Pre-Design Investigation Work Plan
Cornerstone Site B-1
3100 Third Avenue
Bronx, New York

BCP Site #C203044

May 2009; Revised June 2009

Prepared for:

NYSDEC
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, NY 12233-7016

On Behalf of

CS Melrose Site B LLC
1865 Palmer Avenue
Suite 203
Larchmont, NY 10538

Prepared by:

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, New York 11803

June 9, 2009

NYSDEC
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, NY 12233-7016

Attn: Sadique Ahmed,
Environmental Engineer 1

Re: Pre-Design Investigation Work Plan
Cornerstone Site B-1
3100 Third Avenue Bronx, NY
BCP Site ID: C203044

Dear Mr. Ahmed:

CA RICH Consultants, Inc. (CA RICH) is pleased to present this Revised Work Plan to perform agreed upon pre-design investigative activities at the above-captioned Site along 158th Street and Third Avenue in the Bronx, NY (the Site). This Work Plan is submitted on behalf of CS Melrose Site B LLC (the Volunteer). The scope of work is based upon the requirements outlined in your letter dated April 1, 2009, subsequent discussions between representatives of CA RICH, the Volunteer and NYSDEC, and your letter dated June 8, 2009.

If you have questions or require any additional detail, please do not hesitate to call our office.

Respectfully submitted,

CA RICH CONSULTANTS, INC.

Deborah Shapiro
Project Manager

Richard J. Izzo, CPG
Associate

cc: Debbie Kenyon – CS Melrose Site B LLC
C. Doroski - NYSDOH

Attachments

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BCP Site ID: C203044

1.0 INTRODUCTION & PURPOSE

This Pre-Design Investigation Work Plan (PDIWP) has been developed by CA Rich Consultants, Inc. (CA RICH) on behalf of CS Melrose Site B LLC (the Volunteer) in response to the informational requirements of the New York State Brownfield Cleanup Program (BCP) as administered by the New York State Department of Environmental Conservation (NYSDEC) for the above-captioned location (the Site). The scope of work is based upon the requirements outlined in NYSDEC's letter dated April 1, 2009 and April 15, 2009 (Ref. 1 & 2) as well as subsequent discussions between representatives of CA RICH, the Volunteer and NYSDEC. The proposed scope of work includes the following:

- Installation of soil borings with continuous soil sampling from land surface to the top of bedrock at five locations;
- Laboratory analysis of soil samples for required parameters;
- Installation of permanent interface monitoring wells at two targeted locations;
- Installation of temporary interface monitoring wells at two targeted locations;
- Installation of one permanent bedrock well;
- Abandonment of MW-2;
- Sampling of the monitoring well network and laboratory analysis of groundwater samples for required parameters;
- Water table elevation mapping; and,
- Reporting.

This PDIWP is being submitted along with the Remedial Action Work Plan for the Site (Ref. 3). The work contemplated herein is subject to the quality assurance and health and safety protocol set forth in the Quality Assurance Project Plan (QAPP) and Health and Safety Plan (HASP) submitted as part of the RAWP.

The purpose of this PDIWP is to provide additional required information relative to soil and groundwater quality in targeted areas of the Site to assist in the design of appropriate and effective groundwater remedial measures if necessary. If groundwater analytical results indicate that the groundwater quality complies with New York State drinking water standards, then no further action with respect to groundwater will be required.

2.0 SITE DESCRIPTION & HISTORY

2.1 Site Description

The Site is improved with a single story building with a basement totaling 7,613 square feet. The Site is located on the northeast corner of the intersection of East 158th Street with Third Avenue and spans westward. Legally, the Site is designated as Block: 2364, Lot: 45. The current corresponding address to Block: 2364; Lot 45 is 3100 Third Avenue, Bronx, New York. New York City Department of Housing Preservation and Development (NYCDHPD) has owned the Site since January 1999 when it was acquired through condemnation as part of the Melrose Commons Urban Renewal Plan. As part of the redevelopment plans for the Site, CS Melrose Site B LLC plans to purchase Block: 2364; Lot 45 from NYCHPD.

The Site is located in an urban setting and is currently zoned residential (R8) with a C1-4 overlay. A 2008 zoning change included removing the C1 overlay along Brook Avenue, changing the zoning to R8 with a C1 overlay to a depth of 100 feet from Third Avenue, and R8 on the remainder of the lot.

Specific neighboring property usage is outlined below:

North: Vacant Land followed by Commercial Stores

South: E. 158th Street and a NYC Parks and Recreation Playground (Across E. 158th Street)

East: Vacant Land followed by Brook Avenue

West: Third Avenue, La Puerta De Vitalidad Apartment Building (Across Third Avenue)

2.2 Site History

The Site is currently improved with a single story building with a basement totaling 7,613 square feet. Although the Site is currently unoccupied, historical records indicate that the Site was originally developed circa 1951 with a single story building with a basement and was occupied as a store, upholstery business and an undertaker. Circa 1969, the building was also developed as a Dry Cleaner and in 1989, the building operated as a Medical Center and a Dry Cleaner.

According to the Remedial Investigation Report dated November 2007 (Ref. 4) prepared by CA RICH, the contaminants of concern at the Site currently include the following: volatile organic compounds (VOCs) – perchloroethylene (PCE) (a.k.a. dry cleaning fluid) and its degradation products; and select metals. The VOCs of concern were detected in the soil, soil vapor and groundwater. The metals were detected in the soil and/or groundwater.

2.3 Environmental History

A Phase I Environmental Site Assessment (ESA) was conducted by Pressly and Associates, Inc. in March 2004 (Ref. 5) for the Site as well as Block: 2364; Lots: 49, 55, 56, 58, and 70. The Phase I ESA identified the following Recognized Environmental Condition (REC):

A drycleaner operated on Lot 45 [the Site] in and around the period between 1969 and 1989. The dry-cleaner was not identified in the RCRA database or spill files and probably pre-dated those databases. However, due to past experience with the poor housekeeping operations of these facilities, it was recommended that a groundwater investigation be conducted to evaluate the potential presence of dry cleaning solvents in the subsurface on the southern side of the building.

Based on this REC, a Phase II ESA was initiated by CA RICH. As the results of the initial samples were received, the Applicant decided to pursue an application for acceptance into the NYSDEC's Brownfield Cleanup Program (BCP) as well as conduct a Remedial Investigation. The scope of work of the Remedial Investigation included: interior and exterior soil sampling and analysis; interior and exterior soil vapor sampling and analysis; monitoring well installation, surveying, sampling and analysis; and report preparation.

The data indicated that there has been a release of PCE to the subsurface soils at the Site. This is demonstrated by the detections of PCE in the soil as well as in the soil vapor. The data indicates that elevated PCE soil vapors exist below all portions of the existing building foundation that were tested, but is most concentrated below the southern portion of the building, which was formerly used as a dry cleaning facility. In addition, elevated levels of soil vapor containing acetone, MEK, trichloroethylene, toluene, and xylene were measured underneath the building and to the north and east of the building.

Several SVOCs commonly referred to as polynuclear aromatic hydrocarbons or "PAHs" and select metals were detected throughout the Site and on the adjacent lots to the north and east at varying depths. However, only the detections of lead, silver and mercury were above 6 NYCRR Part 375 Unrestricted Use SCOs in the on-Site soils. Pesticides were also detected above 6 NYCRR Part 375 Unrestricted Use SCOs.

The groundwater data conducted during the Remedial Investigation suggests that the underlying groundwater exists primarily in the overburden material above bedrock, classified as the Inwood Marble. However, groundwater was not encountered above bedrock towards the southern and western portions of the Site. The Inwood Marble is massive and contains very few fractures. New York City currently utilizes upstate reservoirs for its municipal water supply. As the underlying groundwater is not used for potable supply purposes, no potable resources appear to be threatened by local groundwater contamination.

As rainwater infiltrates into the soils at the Site, some of the PCE migrates into the groundwater. This condition is most evident in monitoring well MW-2, which is located in the sidewalk adjacent to the location of the former dry cleaner and the elevated PCE soil vapor readings. In addition, three of the monitoring wells installed on the adjacent lots had PCE concentrations exceeding NYSDEC TOGS groundwater standards. Chloroform was also detected above NYSDEC TOGS in wells MW-1, MW-3, and MW-4. Six metals also exceeded NYSDEC TOGS in one or more of the wells

Based upon the results of the Remedial Investigation, it was determined that additional soil and groundwater investigation will be necessary for the effective design of required groundwater remedial measures.

3.0 INVESTIGATION

3.1 Objectives

The objectives of the Investigation phase of this project are to:

1) Further define the nature and extent of soil and groundwater contamination at the Site; and,
2) Obtain the data needed to properly design a remediation program for this Site.

We propose to use the data developed to date as a point of departure and to expand upon this available information. The scope of the investigation will include limited soil sampling and analysis along with the installation of permanent and temporary overburden and permanent bedrock monitoring wells. A utility mark-out will be requested prior to performing the subsurface investigation.

3.2 Field Sampling /Lab Analysis Plan

3.2.1 Installation of Soil Borings/Wells

The five soil borings will be drilled using a track-mounted hollow-stem auger rig with soil sample collection via standard 2”-diameter steel split spoon core barrel samplers. Soil samples will be collected continuously from land surface to the depth at which bedrock is encountered (anticipated to be < 1 foot to 15 feet below the existing basement elevation).

The geologic composition of these soil samples will be identified and logged as the borings are advanced. All soils will be screened with a photo ionization detector (PID) and samples exhibiting the highest PID readings or other signs of contamination will be selected for laboratory analysis. If no elevated PID readings are observed, the deepest dry sample above the water table will be submitted for laboratory analysis. Laboratory analysis for the soil samples will include VOCs, SVOCs, as well as TAL metals, pesticides and PCBs. QA/QC samples will be collected and analyzed in connection with the soil testing as set forth in the QAPP (Ref. 3) and will include 1 trip blank, 1 field blank, 1 duplicate, 1 matrix spike and 1 matrix spike duplicate. Laboratory analysis will include Category B deliverables. In addition, the data will be validated by a qualified third party and a Data Usability Summary Report (DUSR) will be prepared. The locations of the proposed soil borings are illustrated on Figure 1.

Four of the five soil boring locations have been selected for the installation of interface/overburden wells. Two of these wells will be permanent wells (MW-7 and MW-8) and two will be temporary wells (MW-6 and MW-9) (see Figure 1 for locations). The overburden wells will be installed to the overburden/bedrock interface. The overburden wells will be constructed so as to straddle the water table in areas where it exists above the top of bedrock. In some instances, these wells may need to penetrate a few feet into the bedrock to allow for the collection of water flowing between the overburden/bedrock interface (i.e. 'interflow').

The permanent wells will be constructed with ten-foot schedule 40 PVC screen (0.02 slot) and schedule 40 PVC riser. The wells will be sand packed with Morie #2 sand to 1 foot above the top of the screen and constructed with a minimum 1-foot bentonite seal. The wells will be fitted with a cement collar, locking cap and bolt-down curb box or protective steel 'stand-up' casing.

The fifth boring will be completed as a bedrock well (MW-2A). This well will serve as a replacement for MW-2, which will be properly abandoned in accordance with NYSDEC regulations. The bedrock well will be installed via air rotary drilling. An 8-inch hole will be advanced through the overburden and at least 5 feet into competent bedrock. A 6-inch steel casing will then be seated into the bedrock, cemented in place and allowed to set overnight. The drill rig will return the next day and advance a 4-inch hole through the casing using the down-hole hammer.

The hole will extend until the rate of groundwater flow is deemed sufficient to produce groundwater for monitoring purposes or to a maximum of 60 feet below grade. The surface of

each well will be completed with a flush-mounted, bolt-down curb box or protective steel 'stand-up' casing.

3.2.2 Well Development and Sampling

Following installation, all of the wells will be developed by pumping with a submersible pump until they yield relatively turbidity-free groundwater. After the installation of the wells is completed, the elevations of the top of the well casings will be surveyed by a NYS-Licensed Surveyor to the nearest 0.01 of a foot. The depth to water will be measured and a water table elevation contour map will be prepared.

The permanent wells will be allowed to equilibrate at least one week after development. A sampling crew will then purge and sample the new permanent wells and existing wells MW-3 and MW-4 using a properly decontaminated submersible sampling pump. The temporary wells will be sampled immediately after installation if water above bedrock is encountered. The well within the bedrock will obtain water from low yielding water-bearing fractures (if any). As such, the bedrock well will be pumped dry or until one casing volume is removed. A sample will then be collected from the discharge of the pump. The samples will be delivered to an ELAP-approved laboratory for analysis including VOCs, SVOCs as well as total and dissolved TAL Metals. Samples will also be collected from MW-4, MW-7, and MW-8 and analyzed for dissolved TAL Metals. QA/QC samples will be collected and analyzed in connection with the testing as set forth in the QAPP (Ref. 3) and will include 1 trip blank, 1 field blank, 1 duplicate, 1 matrix spike and 1 matrix spike duplicate. Laboratory analysis will include Category B deliverables. In addition, the data will validated by a qualified third-party and a DUSR will be prepared.

3.2.3 Sampling QA/QC Protocol

All on-Site sampling equipment will be decontaminated between each use in the following manner: laboratory grade detergent and fresh water wash using scrub brush, followed by two fresh water rinses and final air dry. Decontaminated sampling equipment will then be wrapped in clean (unused) aluminum foil pending use for sample collection. The submersible pump used for groundwater sample collection will be decontaminated between sample collection by passing the detergent and water mixture through the pump, followed by two fresh water rinses. Gloves worn for sample handling will be discarded between sample collections.

Dedicated, new polyethylene tubing will be used at each well location for purging and sampling. A new disposable sterile wooden tongue depressor will be used for each soil sample collection and discarded after each use.

Samples will be packaged in laboratory-issued sample containers by CA RICH personnel and stored on ice pending same day or overnight shipment to CA RICH's subcontracted State-Certified laboratory. Soil samples for volatile organic analyses will be packaged in 100 milliliter volatile organics jars. Special care is taken to completely fill the jars so that no head space remains after they are sealed, thus minimizing the loss of volatile organic compounds present in the sample. Groundwater samples will be collected directly from the decontaminated sampling pump into laboratory-issued 40-milliliter VOC vials. The vials will be filled completely and checked to ensure no air bubbles are present. Additional field and laboratory QA/QC protocol is included in the associated QAPP (Ref. 3).

3.3 Health & Safety

A Site-specific HASP has been prepared for the Site and is included in the Remedial Action Work Plan (Ref. 3). The HASP will cover all activities in the ‘investigation area', as well as emergency procedures and available emergency services in proximity to the Site.

4.0 REPORTING

After the laboratory data has been received, a Groundwater Investigation and Design Report will be prepared that includes the following:

- A description of the work performed and discussion of results;
- A log and construction diagram of the new wells;
- Tables of laboratory data as compared to NY State limitation standards and cleanup criteria;
- A water table map;
- Copies of the laboratory data reports; and,

- A Data Usability Summary Report (DUSR)

The Report will also contain conclusions and recommendations including the installation of additional on-Site bedrock wells if the sample results indicate the bedrock aquifer is contaminated relative to the findings of the Pre-design Investigation. It is understood that if groundwater analytical results indicate that the groundwater quality complies with New York State drinking water standards, then no further action with respect to groundwater will be required.

5.0 PROJECT SCHEDULE

Activity	Date
Approval of PDIWP	June 15, 2009
Commencement of Field Work	June 22, 2009
Submission of Draft Groundwater Investigation And Design Report	July 22, 2009
NYSDEC approval of Groundwater Investigation and Design Report	August 15, 2009
Construction of below grade portions of groundwater treatment system (if needed)	September 1, 2009
Completion of above ground portion of groundwater treatment system (if needed)	November 2009
First Round of Post-Remedial Monitoring	December 2009
Preparation of Final Engineering Report and Site Management Plan	Jan.–February 2010
Certificate of Completion	Feb.- March 2010

REFERENCES

1. NYSDEC; *Comments on Draft Remedial Investigation Report (RIR) and Remedial Action Work Plan (RAWP) Cornerstone Site B-1, Bronx, NY;* April 1, 2009

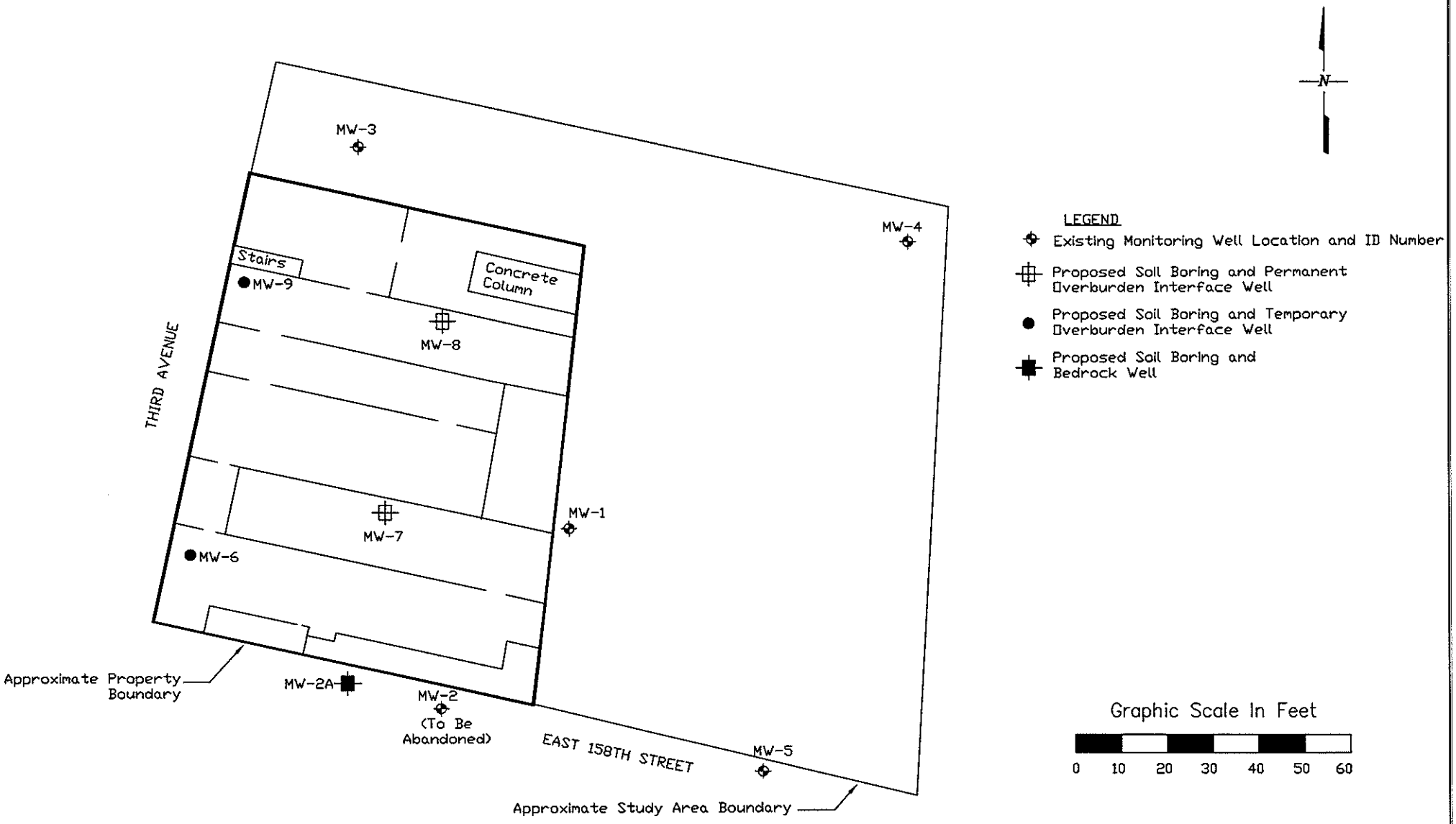
2. NYSDEC; *Additional Comments on Draft RAWP and Pre-Design Investigation Work Plan Cornerstone Site B-1, Bronx, NY;* April 15, 2009

3. CA RICH; *Remedial Action Work Plan, Cornerstone Site B-1, Bronx, NY ;*April 2009

4. CA RICH; *Remedial Investigation Report, Cornerstone Site B-1, Bronx, NY;* November 2007

5. Pressly & Associates, Inc., *Phase I Environmental Site Assessment For Site B, Block 2364; Lots 45, 49. 55, 56, 58, Third Avenue/E.160th Street/Brook Avenue, Bronx, NY.* (also includes Lot 70); March 2004

FIGURES



* Based on survey by Montrose surveying CO. LLP., 11/08/2007.
Datum: Borough of Bronx Topographical Bureau

CA RICH CONSULTANTS, INC.

Certified Ground-Water and Environmental Specialists
17 Dupont Street, Plainview, New York 11803

TITLE: PROPOSED SOIL BORING AND WELL LOCATIONS		DATE: 4/30/2009
		SCALE: As Shown
FIGURE: 1	CORNERSTONE B1 3100 3rd AVENUE THE BRONX, NEW YORK	DRAWN BY: J.T.C.
DRAWING NO: 2007-12C		APPR. BY: D.S.