APPROVED
K. Burger 5/30/07

APPROVED
5/30/07

REMEDIAL DESIGN
WORK PLAN

JIMMY'S DRY CLEANER SITE
SITE NO. 1-30-080
ROOSEVELT, NEW YORK

WORK ASSIGNMENT NO. D004446-4

Task 2 Includes Pilot test + QPCR + report

Prepared for:

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
WOODBURY, NEW YORK

MAY 2007

JIMMY'S DRY CLEANER SITE
SITE NO. 1-30-080
ROOSEVELT, NEW YORK
REMEDIAL DESIGN
WORK PLAN

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1.0 INTRODUCTION

As part of New York State's program to investigate and remediate hazardous waste sites, the New York State Department of Environmental Conservation (NYSDEC) has issued a work assignment to Dvirka and Bartilucci Consulting Engineers of Woodbury, New York under its Superfund Standby Contract with the NYSDEC to prepare a remedial design to address soil, soil vapor, indoor air and groundwater contamination by volatile organic compounds (VOCs) in the area of a former dry cleaning facility (Jimmy's Dry Cleaner) located at 61 Nassau Road, in Roosevelt, New York. This remediation is being conducted as Operable Unit No. 1 (OU1). Remediation of contaminated groundwater downgradient of the site is being addressed as Operable Unit No. 2 (OU2).

The Jimmy's Dry Cleaner site is a Class 2, inactive hazardous waste disposal New York State Superfund site (Registry No. 1-30-080). A Remedial Investigation (RI) was completed for the site in August 2003 and an Interim Remedial Measure (IRM) soil vapor extraction (SVE) system was installed at the dry cleaner site in August 2002. A feasibility study (FS) for OU1 was completed in January 2004. A Record of Decision (ROD) was finalized in March 2004.

The major elements of the Jimmy's Dry Cleaner OU1 Site remedy, as presented in the ROD, are as follows:

- A more extensive soil vapor extraction (SVE) system (enhancing the SVE system constructed as an Interim Remedial Measure) will be installed. This will consist of three additional deep vapor extraction wells to address the source area soils, and seven existing shallow vapor extraction wells to address soil/soil gas/indoor air near the Deli and adjacent residences. The SVE system will include off-gas treatment to meet applicable discharge requirements.
- A pilot scale study will be conducted to confirm that conditions at the site are suitable for chemical oxidation of groundwater contamination.
- If the results of the pilot study are favorable a full-scale application of chemical oxidant will be injected into the aquifer underlying the site.

- If the results of the pilot study indicate that an oxidation technology is not suitable for technical reasons, groundwater extraction and treatment will be implemented in place of chemical oxidation.

- Development of a site management plan to (a) address residual contaminated soils that may be excavated from the site during future redevelopment; (b) evaluate the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; and (c) identify any use restrictions.

- An annual certification will be prepared and submitted by a professional engineer or environmental professional acceptable to the Department, which will certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that would impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with any operation and maintenance or site management plan.

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial or industrial uses only; (c) restrict use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Nassau County Department of Health; and (d) require the property owner to complete and submit to the NYSDEC an annual certification. Once soil and groundwater are treated to achieve unrestricted use levels, the institutional control could be modified.

- The operation of the components of the SVE remedy will continue until the remedial objectives have been achieved or until the NYSDEC determines that continued operation is technically impracticable. Continued monitoring of groundwater, soil gas, and air will be done until remedial goals are met.

Remediation of the Jimmy's Dry Cleaner OU1 site is being performed with funds allocated under the New York State Superfund Program. This Work Plan includes a detailed description of the project tasks, a project schedule and budget for the project. In addition, key project milestones are identified and D&B project team organization is presented.

2.0 SITE HISTORY AND BACKGROUND

2.1 Site Background

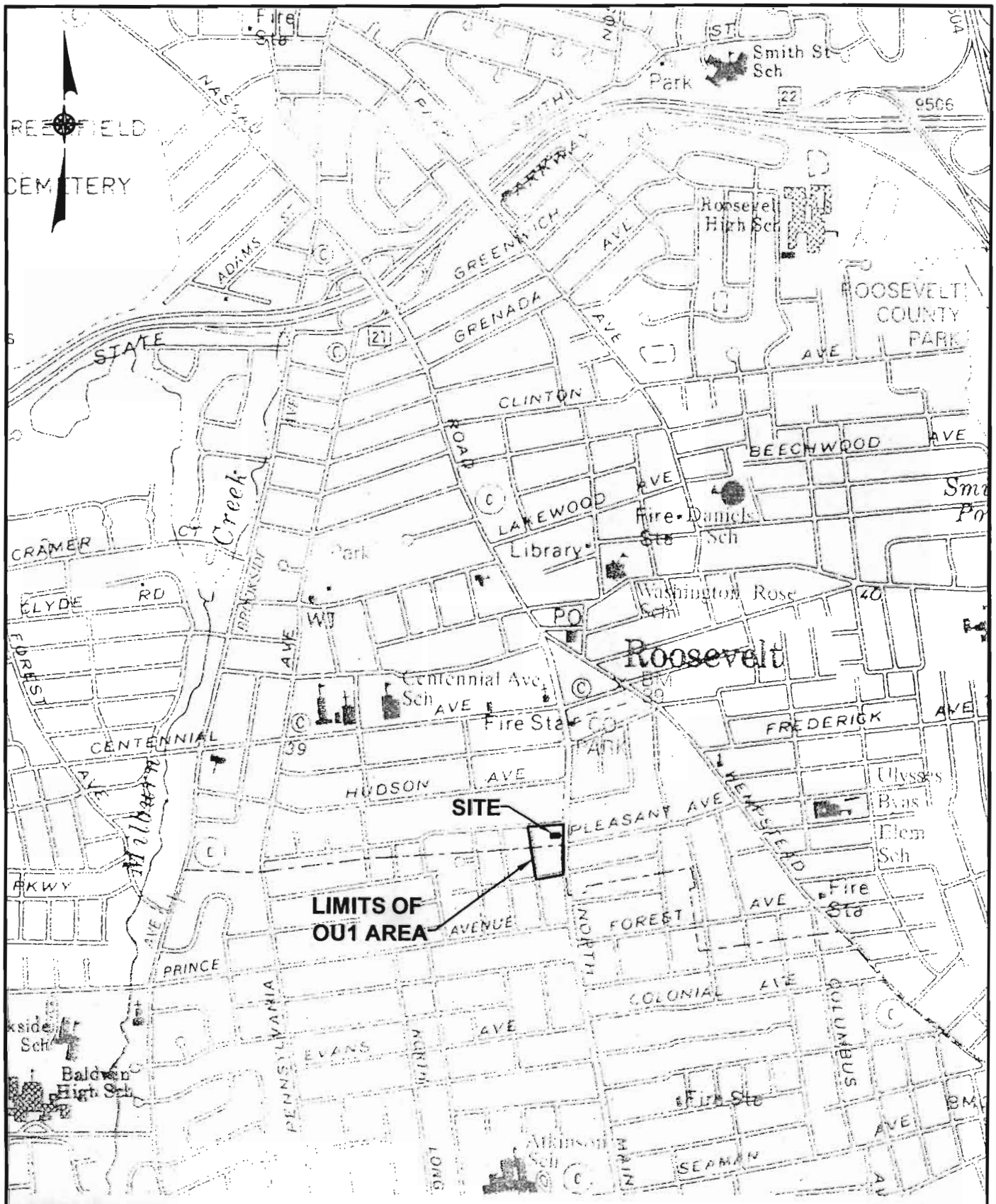
In 1988, as a result of an inspection of the site by the Nassau County Department of Health Department (NCDH), it was determined that the dry cleaning operations and hazardous materials storage at the former Jimmy's Dry Cleaner facility presented a significant risk to public health and the environment. This conclusion was based on the observation of poor housekeeping practices, such as leaking dry cleaning equipment and inappropriate hazardous waste storage practices. The NCDH also noted the presence of an unregistered underground 3,800-gallon fuel oil tank on the south side of the building and a dry well located near the dry well in the front lot east of the building. This dry well was identified as a potential point of discharge for hazardous materials.

In addition, the site owner was fined in 1992 for failing to tightness test the fuel oil tank. The underground fuel tank was reportedly removed from service and replaced by a 250-gallon aboveground storage tank inside the building.

The poor housekeeping practices and discharges of dry cleaning materials, primarily tetrachloroethane (PCE), into the subsurface at the Jimmy's Dry Cleaner site over many years resulted in contamination of soil, soil vapor, indoor air and groundwater. The dry cleaner has been shut down since 1998.

2.2 Site Location, Description and Land Usage

The Jimmy's Dry Cleaner site is located in southern Nassau County at 61 Nassau Road in Roosevelt, New York (see Figure 2-1). The Jimmy's Dry Cleaner property is rectangular in shape and covers an area of approximately 1 acre, including the building (see Figure 2-2). The property building, covering approximately one third of the site, is rectangular in shape and is



SOURCE: USGS MAP FREEPORT QUADRANGLE

JIMMY'S DRY CLEANER SITE
ROOSEVELT, NEW YORK

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SITE LOCATION MAP

FIGURE 2-1

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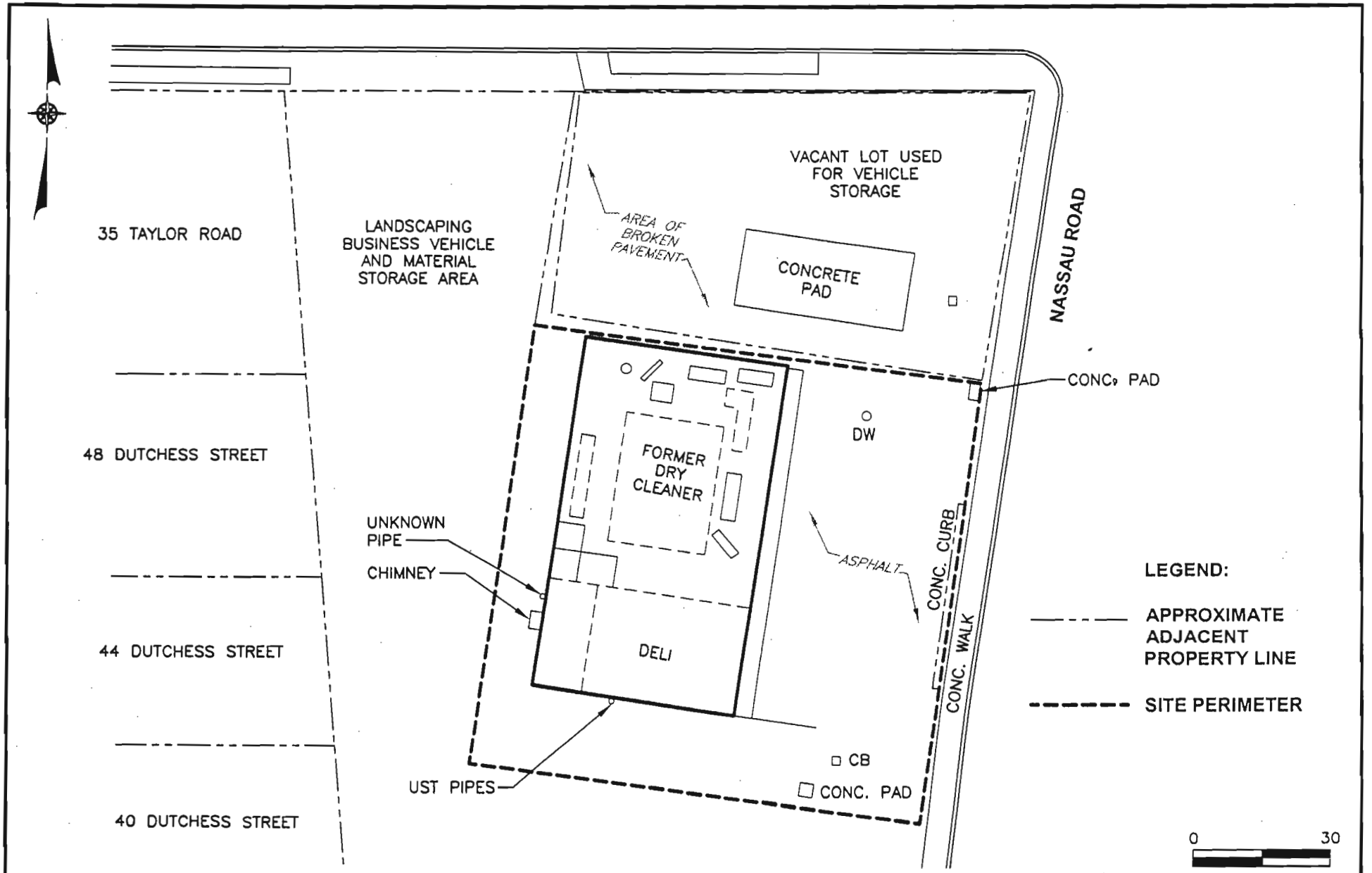

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JIMMY'S DRY CLEANERS
ROOSEVELT, NEW YORK

SITE LAYOUT

FIGURE 2-2

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oriented north-south toward the rear of the property. The building was formerly used for the dry cleaning operations and is comprised of a single-story masonry building built on a concrete slab. The remainder of the site is asphalt or gravel covered parking areas.

A small area of the building, at the southeast corner, is currently under commercial use as a delicatessen (deli). Properties located immediately adjacent to the south and west sides of the site are used by a landscaping company for vehicle and materials storage, primarily firewood. To the north of the property is a vacant lot owned by the Town of Hempstead. Immediately adjacent to the building on the south side is a small storage area and to the east is a parking area, both used by the deli.

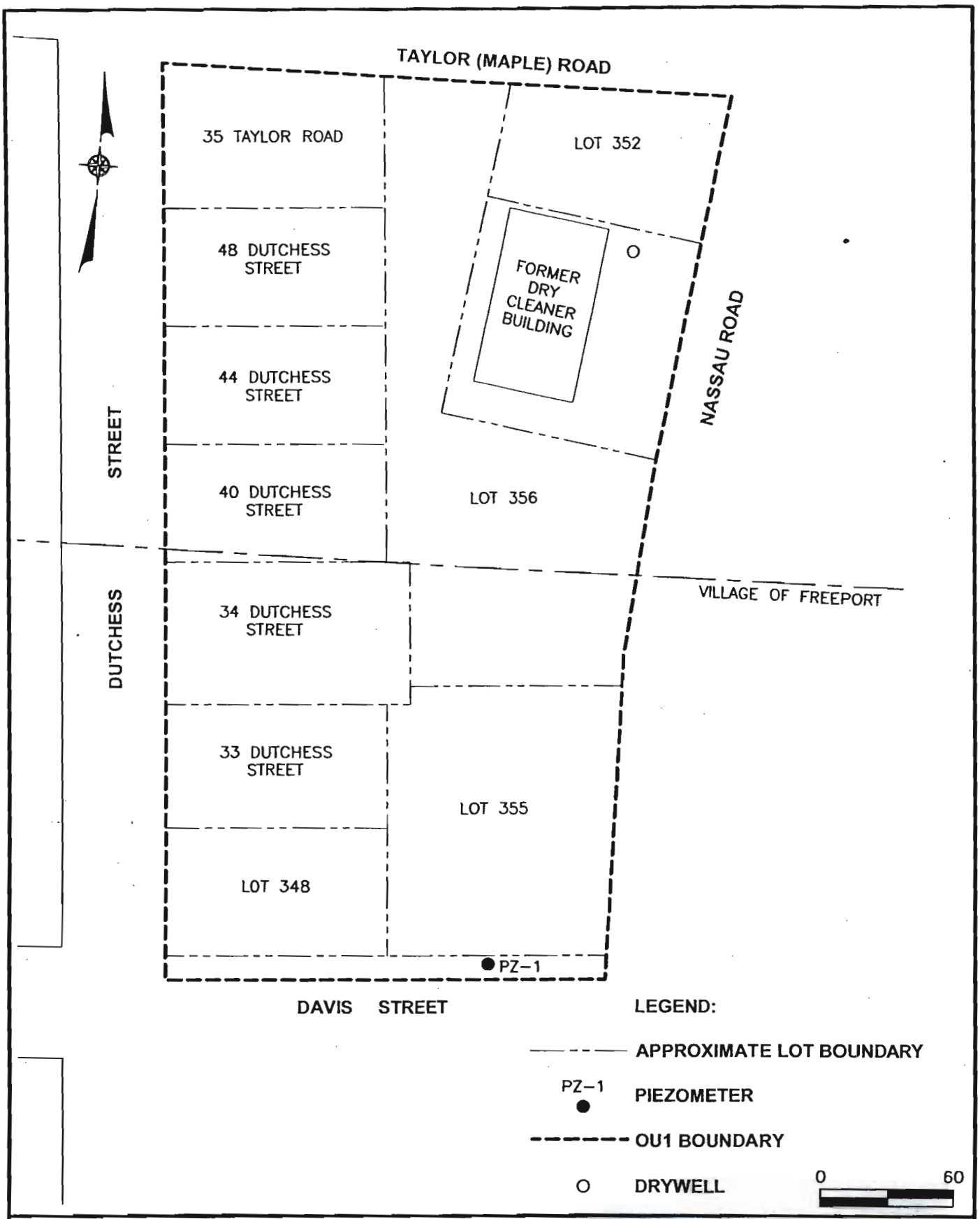
A survey of the former Jimmy's Dry Cleaner property was conducted during the RI in 2002 by Chazen Engineering & Land Surveying Co. The survey was used to document the ground surface elevation and location of groundwater and soil monitoring points.

The area surrounding the site is mixture of residential and commercial properties. The commercial properties are located predominantly along Nassau Road.

As presented in Section 1.0, OU1 covers a source area of soil, soil gas, indoor air and groundwater contamination and is the subject of this Remedial Design Work Plan. OU2 will address the area of the downgradient groundwater plume resulting from the on-site contamination. For perspective and reference in this work plan, descriptions of the remediation operable units are provided below.

Operable Unit 1 (OU1)

OU1 has been designated as the former Jimmy's Dry Cleaner property and the adjacent properties comprised of paved lots and residential properties. These properties comprise the entire block bounded by Taylor Road to the north, Nassau Road to the east, Davis Street to the south and Dutchess Street to the west. A map showing the layout of OU1 is presented as Figure 2-3.



JIMMY'S DRY CLEANER SITE
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OU1 SITE MAP

FIGURE 2-3

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Operable Unit 2 (OU2)

OU2 is the area encompassing the off-site groundwater contaminant plume and will be the subject of another remedial design work assignment. The OU2 area is south (downgradient) of the Jimmy's Dry Cleaner site. The configuration of the off-site plume indicates that the distribution of contamination may be impacted by low permeable zones in the subsurface that may have a bearing on remediation and monitoring at OU1. As such, these factors may impact the distribution of contamination and remediation at OU1, if these conditions are present in the on-site area.

Horizontally, the PCE plume in groundwater extends approximately one mile from the site and is approximately 400 feet wide. Vertically, the off-site PCE plume is concentrated in zones between approximately 50 to 150 feet below grade, with the highest concentrations at depths of approximately 60 and 100 feet below grade. The maximum PCE concentration (23,000 ug/l) was detected in the 54 to 64-foot depth horizon approximately 800 feet south of the site.

2.3 Site Geology and Hydrogeology

Geology

According to the literature, the site is located within Pleistocene glacial deposits (Upper Glacial formation), which extend from grade to a depth of approximately 200 feet. Regionally, these deposits are reported to be comprised of poorly sorted sand and gravel with local lenses of fine sand, silt and clay. The underlying Magothy formation consists predominantly of silty sands with isolated lenses of clay and organic material. The public water supply in the site area is obtained from deep production wells completed in the Magothy formation.

This discussion of site geology is based on information collected during the drilling of soil borings during historical site investigations and the RI. The soil encountered in drill cuttings

in the upper approximate 100 feet of sediments in the site vicinity are described as brown to gray medium-grained sands, with varying amounts of gravel and trace amounts of silt. The deepest soil boring constructed on the former dry cleaner property, was installed to a depth of approximately 60 feet below grade. To characterize the deeper sediments in the vicinity of the site, gamma logging was conducted in deeper borings drilled downgradient of the site. The gamma logs indicated that horizons of denser, less permeable materials are present within the medium-grained sands. These zones were identified at varying depths between 50 and 200 feet below grade. Based on the vertical distribution of chemicals within the upper 120 feet, it appears that the shallower low permeability zones do not significantly inhibit the vertical migration of contaminants. However, the gamma log data also indicated that a more highly impermeable stratigraphic layer might exist at approximately 120 feet below grade, which may serve to more significantly inhibit vertical contaminant migration.

Hydrogeology

The water table at the site was encountered at depths between approximately 15 and 20 feet below grade. Groundwater flow in the vicinity of the site is toward the south. Potentiometric surface elevation contour maps for the zones at 40 feet and 70 feet below the water table show slightly varied flow directions from south to south-southwest. An evaluation of the hydraulic head differences within well clusters indicates a downward head of approximately 0.5 foot or less. The horizontal groundwater flow rate at the site was calculated in the RI to be approximately 2.5 feet per day.

2.4 Previous Investigations

An initial groundwater investigation was conducted in 1994 by an environmental consultant for the lending institution preparing to foreclose on the subject property. This investigation identified elevated concentrations of VOCs, predominantly PCE, in groundwater along the northern and southern walls of the on-site building. Dry cleaning equipment, such as spent filters, cartridges and spent tanks, were observed along the northern building wall at that time, with no spill prevention or containment.

A follow-up investigation conducted by the NCDH in December 1995 confirmed the presence of PCE in soil and groundwater. In 1999, the NYSDEC conducted a limited groundwater investigation that identified the presence of PCE at significant distances downgradient of the site. The study comprised the installation of seven direct push test holes to sample groundwater at various horizons.

Indoor air monitoring was conducted by the NCDH on several occasions between 1988 and 2002. In 2002, the New York State Department of Health (NYSDOH) performed ambient air sampling within several residences along Dutchess Street (adjacent to the site to the west) and in the deli located adjacent to the dry cleaner. Elevated concentrations of PCE (above NYSDOH ambient air guidance levels) were detected at 40 Dutchess Street and the deli. To reduce the presence of PCE at these locations and to inhibit subsurface migration of vapors from the site to these and other locations, the NYSDEC directed that an IRM be implemented. To achieve the IRM objectives for VOCs in unsaturated soils at and near the site, a low volume SVE system was installed near the dry cleaner building and near 40 Dutchess Street.

The IRM SVE system was installed at the site in August 2002. The SVE system was designed to provide an area of low pressure near each of the potential receptors. The SVE system consists of a vacuum extraction blower, two vapor-phase carbon canisters and seven shallow vapor extraction wells connected by 2-inch diameter schedule 80 PVC piping. The blower is a 1.5-hp, 230-volt, single-phase blower. The blower is housed in a watertight shed located along the western wall of the building. The wells were installed to depths of between 5 and 10 feet, with 3-foot and 5-foot well screens, respectively. To determine the radius of influence of the SVE system beneath the on-site building, a vapor monitoring point (VMP-1) was installed to a depth of 3 feet below grade adjacent to the wall separating the former dry cleaner from the deli.

The SVE system began operation in August 2002. To evaluate the effectiveness of the SVE system, indoor air quality monitoring was conducted on three occasions during November 2002, and in January and March 2003. In the initial two sampling events, elevated concentrations of PCE (above background levels) were detected in the deli and Kentucky Fried Chicken

building located south of the site, but the detected concentrations were below the NYSDOH guidance value. As a result, it was concluded that the IRM SVE system was successful in reducing concentrations of VOCs in and around the sampled locations. In the March 2003 sampling event, PCE was detected in the deli and at 40 Dutchess Street at concentrations above background levels, and also above the NYSDOH guidance value at 40 Dutchess Street. The RI indicated that the detected exceedance may have been a result of low temperatures and ground frost. To inhibit further migration of VOCs into the deli and other nearby buildings, the extraction rates of the SVE wells near the deli were increased.

The RI identified the primary contaminant for OU1 as PCE in the soil, soil vapor, indoor air and groundwater. A total of 14 soil borings and 56 soil samples were collected at selected sampling depths using a 4-foot Macro core sampler with acetate liners. The results of the soil analyses were compared to the Technical and Administrative Guidance Memorandum (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs). The RSCO for PCE is 1.4 milligrams per kilogram (mg/kg). PCE was detected in most soil samples at various depths. Localized high PCE concentration areas were identified beneath and in the vicinity of the northern portion of the building where dry cleaning operations were conducted (concentrations up to 330 mg/kg in the 18- to 20-foot sample depth), and in the vicinity of the dry well in the front lot (concentrations up to approximately 5 mg/kg in the 8- to 12- foot sampling zone). The depth of the dry well was reported to be approximately 8 feet below grade.

The distribution of PCE in soil vapor in the on-site area was similar to the PCE distribution in the soil. Elevated PCE was detected in soil vapor, at levels above 0.1 milligram/cubic meter (mg/m^3) beneath the entire former dry cleaner property except the extreme southeastern portion, and extending approximately 50 feet to the northwest from the northwest building corner and approximately 30 feet west of the western building wall. Other VOCs, including trichloroethene, methylene chloride, toluene, ethylbenzene and xylenes were detected at lower concentrations. The highest PCE concentrations were detected in the area of the northwest corner of the building, where dry cleaning operations were conducted. The Feasibility Study prepared for NYSDEC in January 2004 indicated that the elevated PCE in the soil vapor

along the north and east walls of the building may be associated with surface dumping, chemical storage or leaking equipment in this area, or potential discharges to the dry well in this area.

During the RI, PCE was detected in groundwater at ITDGW-3, an on-site sampling point, at concentrations ranging between 240 micrograms per liter (ug/l) and 3,990 ug/l at depths of 26 to 62 feet below grade (the Class GA groundwater standard for PCE is 5 ug/l). The highest concentration was detected in the 38- to 42-foot sampling interval, and the deepest sampled interval (58 to 62 feet below grade) contained PCE at 240 ug/l. The results for ITDGW-2, another on-site sampling point, showed the presence of elevated levels of PCE in three samples collected between 20 and 55 feet below grade. Piezometer PZ-1, located at the southern edge of the OU1 area and screened 15 to 20 feet below grade, contained PCE at a concentration of 15,000 ug/l.

The distribution mechanism for the PCE, as presented in the RI, was interpreted to be the result of the dense non-aqueous phase liquid (DNAPL), primarily comprised of PCE, migrating downward through the aquifer. When less permeable strata are encountered, the DNAPL moves laterally in the direction of groundwater flow until a break or discontinuity is encountered and then the DNAPL continues to move downward.

A bench scale treatability study of permanganate oxidation was completed in September 2004. The results of the study indicated that PCE was rapidly degraded by permanganate. The study also determined a soil matrix demand value. Metals analysis was performed during the study to determine the impact of treatment on metals that may be potentially mobilized by permanganate oxidation. The study showed that aluminum, chromium and manganese were observed in water samples at concentrations above groundwater standards. The study recommended that further study during field scale implementation should be completed. In June 2005, a bio-stimulation, bio-augmentation, and nano-scale iron treatability study was completed for the Jimmy's Dry Cleaner site. The objectives of the treatability study included:

- Verification of treatment technology with respect to contaminant and daughter product removal;

- Comparison of degradation rates;
- Identification of the most appropriate electron donor for bio-augmentation; and
- Estimation of the dosage of zero-valent iron (ZVI) required for treatment.

The conclusions of the treatability study indicated that ZVI and bio-augmentation have the potential to treat the PCE and its daughter products.

3.0 SCOPE OF WORK

The services to be provided by D&B under this work assignment are comprised of six tasks. These tasks include:

- Work plan preparation;
- Conducting pre-design field studies comprised of groundwater and soil sampling, and conducting a field-scale pilot test to further evaluate the effectiveness of the selected groundwater remedial technology (in-situ chemical oxidation);
- Preparation of plans and specifications (contract documents) for the chemical oxidation groundwater remedy;
- Preparation of contract documents for the enhancement of the existing SVE system;
- Installation of sub-slab depressurization systems; and
- Pre-award services for the NYSDEC.

Each of these tasks is described in the following sections.

3.1 Task 1 - Work Plan Preparation

This task includes review of project documents and reports, and preparation of this Work Plan. This task includes telephone discussions with NYSDEC representatives to discuss project scoping issues and preparation of a draft Work Plan for submittal to the NYSDEC. Comments received will be incorporated into the final Work Plan. The final Work Plan will be submitted in printed format and portable document format (PDF).

Task 1 also included a reconnaissance of the project area to evaluate potential locations for injection wells, monitoring points for groundwater and soil vapor, and staging of equipment and materials that will be required for the pre-design field investigation, pilot testing and full-scale implementation of the selected remedy and enhancement of the SVE system. The reconnaissance also identified limitations that may impact implementation of the remedies, including access to the site and surrounding properties.

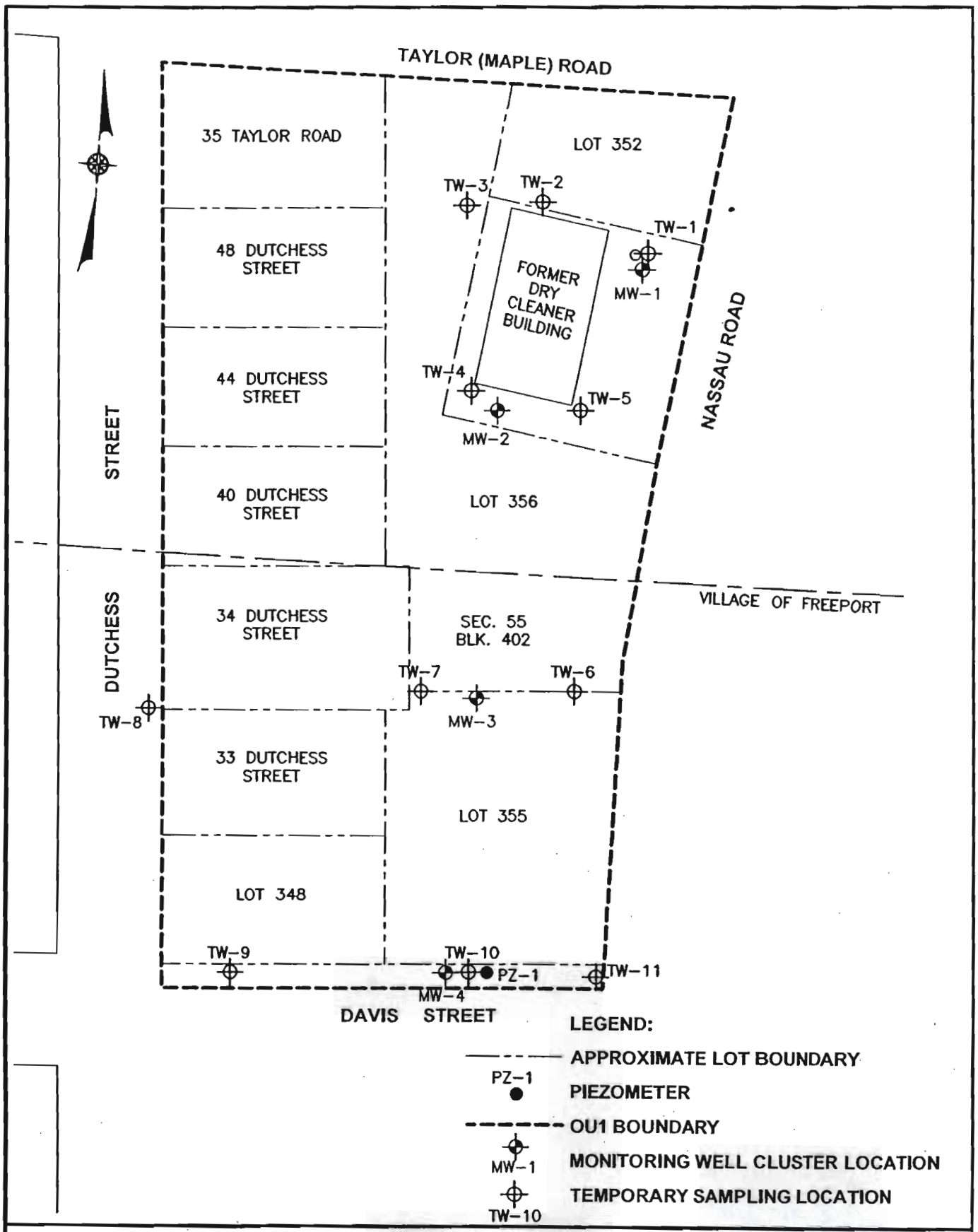
3.2 Task 2 - Pre-Design Field Studies

Pre-design studies will be conducted to provide additional information for the OU1 remedial design. These studies include soil and groundwater quality characterization and an on-site pilot test for chemical oxidation. It is assumed that access to the project site and adjacent properties for all investigation work described below will be coordinated by the NYSDEC.

3.2.1 Subsurface Soil Sampling

Subsurface soil samples will be collected during drilling for the temporary wells on-site (see Section 3.2.2) that will be installed to better define the extent of soil contamination on-site. During drilling of the boreholes for five of the temporary wells (TW-1 through TW-5, see Figure 3-1), four split spoon soil samples will be collected from each borehole, between ground surface and the water table (approximately 20 feet below grade). Samples will be collected for stratigraphic information as well as for soil quality, from depths of 3 to 5 feet below grade, 8 to 10 feet below grade, 13 to 15 feet below grade and 18 to 20 feet below grade. Soil samples will be obtained using decontaminated split spoons and will be logged for geologic characteristics, odors and staining, and will be screened for VOCs with a PID. Each of these soil samples will be submitted for laboratory analysis of Target Compound List (TCL) VOCs.

In addition to the collection of samples for chemical analysis, at least one subsurface soil sample from the unsaturated zone and one sample from the screened interval of each of the 11 permanent monitoring wells (see Section 3.2.4) will analyzed for grain size including sieve and hydrometer analysis. Grain size analyses will be performed in accordance with ASTM D422.



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PRE-DESIGN INVESTIGATION SAMPLING LOCATIONS

FIGURE 3-1

Drilling and soil sampling equipment will be decontaminated between uses. A portable decontamination pad will be utilized to collect decontamination fluids. Decontamination, purge fluids and drill cuttings generated during the field program will be contained in 55-gallon drums and staged in the vicinity of the site for subsequent off-site disposal. It is assumed, for budgetary purposes, that drums will not be removed until all drilling work is completed. The location for the decontamination pad and drum storage area will be determined at the start of the drilling program.

3.2.2 Temporary Well Installation and Sampling

In order to evaluate on-site groundwater quality, vertical profile groundwater sampling will be conducted using temporary wells. Samples will be collected from 11 locations along 4 east-west transects beginning in the area on the north side of the on-site building and continuing to the south end of the OU1 site (see Figure 3-1). At each location, hollow stem augers will be advanced to approximately 120 feet below grade and the borehole will be gamma logged, if applicable (see Section 3.2.3). A temporary 2-inch diameter well with 0.010-inch slot well screen will be placed in the borehole. The augers will be removed from the borehole, allowing the formation to collapse around the well. Approximately three well volumes will be purged from the well and a groundwater sample will be collected from the pump discharge at the lowest sustainable flow rate. The well will then be retracted at 20-foot intervals and the process repeated until six samples have been collected at each location or the water table is reached, whichever comes first, for a total of 66 groundwater samples. The submersible pump will be decontaminated before its first use on-site, between samples and prior to being removed from the site. Upon completion of sampling, the well will be removed, and any remaining open space in the borehole will be backfilled with cement/bentonite grout and completed at grade with the original surface (soil, asphalt or concrete).

Each groundwater sample will be analyzed for TCL VOCs. Sample analysis will have 1-week expedited turnaround time. Field measurement of pH, temperature, oxidation-reduction potential (ORP), conductivity, turbidity and dissolved oxygen will also be performed on the groundwater samples. Water generated during sampling will be contained and subsequently

discharged to the Nassau County sanitary sewer system. Please note discussions with Nassau County indicated water can be disposed of in the system if tetrachloroethene (PCE) concentrations are less than 1 milligram per liter (mg/l).

3.2.3 Gamma Logging

To characterize the lithology of the site, gamma logging will be conducted in four of the boreholes constructed for the temporary wells described above. The four temporary wells to be logged are TW-1, TW-2, TW-4 and TW-10. The gamma logging will be conducted through the hollow stem augers prior to installation of the temporary wells.

3.2.4 Monitoring Well Installation

Upon review of the groundwater data obtained from the vertical profiling program, it is estimated that 11 permanent monitoring wells will be installed as part of the pre-design field investigation. The monitoring wells will be installed as three-well clusters at four locations on the OU1 site. Existing piezometer PZ-1 will be used as the shallow well in the downgradient well cluster. It is assumed that each monitoring well cluster will be comprised of one shallow well (total depth of approximately 30 feet), one intermediate well (total depth of approximately 60 feet) and one deep well (total depth of approximately 90 feet). The actual depths and locations of the monitoring wells will be determined based on the results of the temporary well sampling program.

The monitoring wells will be installed using the hollow stem auger drilling method. Each well will be constructed of 2-inch diameter PVC well screen and casing. The screen length for each monitoring well will be 10 feet.

After construction, each monitoring well will be developed to ensure an adequate hydraulic connection to the aquifer. Each well will be developed for a maximum of 2 hours. It is assumed that water generated during the well development process will be contained and

subsequently discharged to the Nassau County sanitary sewer system. As noted previously, water will be discharged upon approval by Nassau County.

3.2.5 Monitoring Well Sampling

Prior to implementation of the chemical oxidation pilot test (described in Section 3.2.9 below), the new and existing permanent monitoring wells will be sampled to establish baseline conditions. The wells to be sampled include the two new injection wells and six new monitoring wells installed as part of the chemical oxidation pilot test (described in Section 3.2.9), the 11 new monitoring wells described in Section 3.2.4, existing upgradient well MW-1 and existing downgradient well PZ-1.

Samples will be collected using low flow purging techniques and it is assumed that purge water will be contained and subsequently discharged to the Nassau County sanitary sewer system, with approval of Nassau County. Specific sampling procedures are described in Section 5.0.

Each sample will be analyzed for VOCs, Target Analyte List (TAL) metals, hexavalent chromium and chloride. The baseline monitoring will include the field measurement of pH, temperature, ORP, specific conductivity, turbidity and dissolved oxygen.

3.2.6 Site Survey

In addition, as part of the pre-design investigation, a survey of the OU1 site will be conducted by a New York State licensed surveyor. The survey will include a property boundary survey at a scale of 1 inch = 10 feet as well as a physical features survey which will include ground surface elevations with contour intervals of 1 foot. The physical features survey will also include the location of aboveground and below ground utilities (as identified during the utility survey described in Section 3.2.7) and the new and existing on-site sampling locations. This survey will be used to assist the NYSDEC in obtaining temporary and long-term easements.

3.2.7 Utility Survey

The locations of all aboveground and below ground utilities within the Jimmy's Dry Cleaner property will be identified to supplement the utility survey conducted during the RI. In addition, the survey will also be performed at all proposed sampling locations located outside the property boundary. The utility mark-out will be performed prior to performance of the site physical features survey using non-intrusive with ground penetrating radar (GPR) delineation techniques. The estimated level of effort for performing the utility markout is based on completing the utility survey within 2 business days.

3.2.8 Pre-Design Field Studies Report

When the analytical data packages have been received, the results will be reviewed and tabulated by medium. Groundwater results will be compared to the NYSDEC Class GA groundwater standards and guidance values. Soil sample results will be compared to the NYSDEC RSCOs. A Data Usability Summary Report (DUSR) will be prepared. Full data validation will not be conducted, although the Category B data packages can be validated at a later time, if warranted.

A letter report will be prepared to document the pre-design investigation and present the findings. The report will provide documentation of the field investigation, descriptions of sampling methods, maps showing sample locations and analytical results, tabulated analytical results by medium in comparison to applicable standards and guidelines, and evaluation of the current nature and extent of the groundwater contamination and baseline conditions. Based on the results of the pre-design investigation, recommendations will be provided regarding the area within which the pilot test and initial phase of remediation will be conducted.

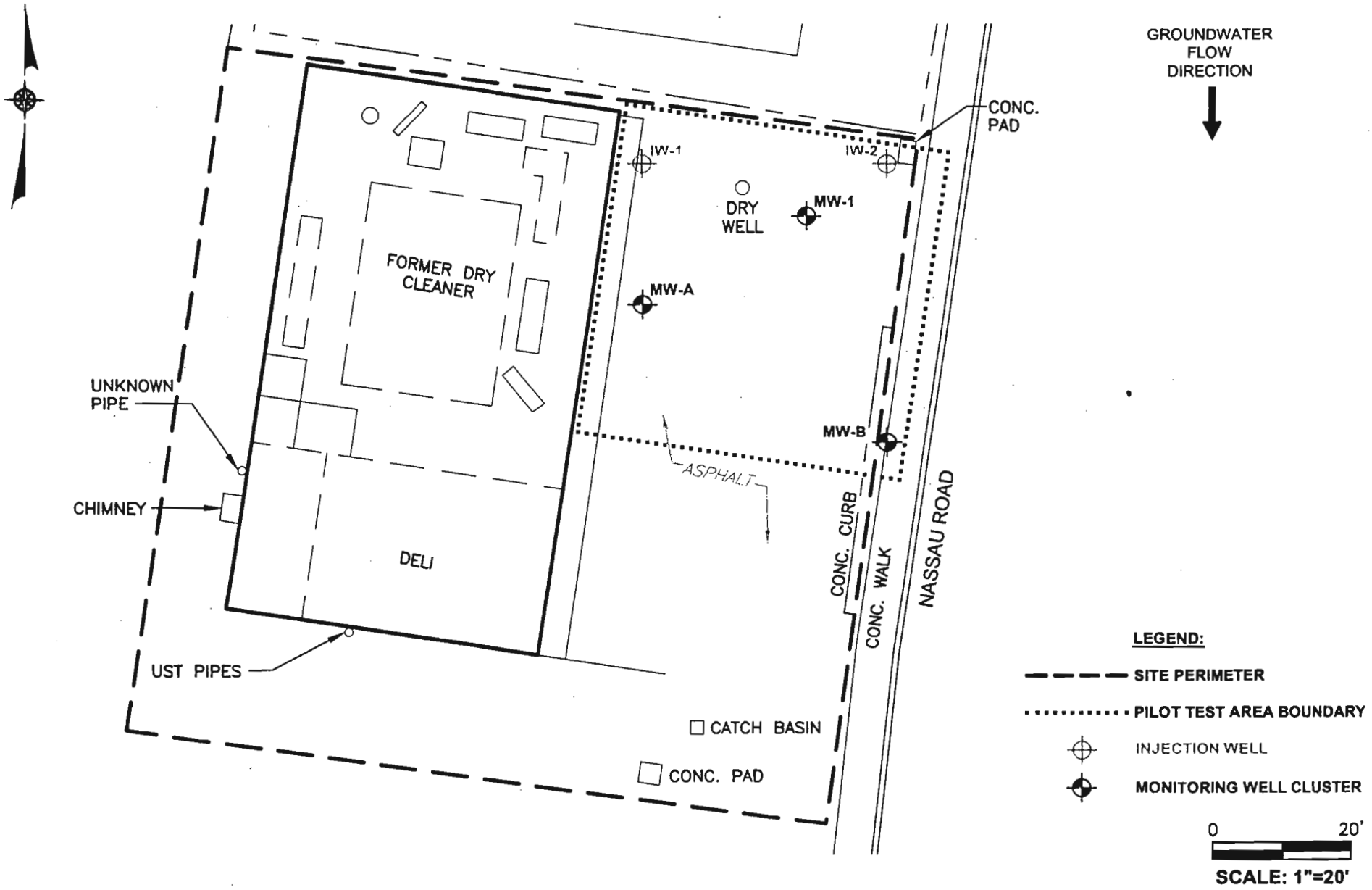
3.2.9 Chemical Oxidation Pilot Test

In order to further evaluate the effectiveness of chemical oxidation for remediation of contaminated groundwater, as well as to determine design parameters (i.e., injection well

spacing, oxidant dosage rates, etc.) for full-scale implementation of the selected remedy, a pilot test will be performed. The objectives of the pilot test include the following:

- Determine the optimum number and locations of the injection points for full-scale implementation;
- Determine the effective zone of influence of each injection point and whether groundwater mounding will occur due to the injection of oxidant;
- Determine the optimum injection pressure(s);
- Determine the optimum mass and volume of oxidant to be injected at each location; and
- Determine the effect of the oxidant and any by-products on groundwater and/or soil vapor quality.

The chemical oxidation pilot test will be conducted using permanganate in the northeast corner of the former dry cleaner property (see Figure 3-2). It is assumed that the NYSDEC will obtain any necessary access agreements for the pilot test. A request for proposal (RFP) package will be prepared for procuring a subcontractor to supply the permanganate and inject it into the subsurface. The RFP will require information from the subcontractors with respect to their experience in implementing chemical oxidation projects. The subcontractors will be provided with the volume of oxidant to be injected and details regarding the injection wells' construction, boring logs and background data on the site. Subcontractors will be required to prepare a spill prevention and control plan, work and waste handling plan and health and safety plan, for use by their personnel at the site. Each potential subcontractor will also be provided with a copy of D&B's standard subcontractor agreement and pertinent portions of the master agreement between the NYSDEC and D&B. A draft solicitation package will be provided to the NYSDEC for review and comment. Once finalized, the RFP package will be sent to potential subcontractors for bidding. Once received, quotations will be reviewed and a subcontractor selected. For budget purposes, a cost of $50,000 for the permanganate injection subcontractor has been estimated. This estimate includes costs for contractor mobilization/demobilization, oxidant, equipment and utilities necessary for the permanganate injections.



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JIMMY'S DRY CLEANERS
ROOSEVELT, NEW YORK

PILOT STUDY

FIGURE 3-2

F:\2548\2548-02.dwg, FIG3-2, 01/30/07 10:33:40 AM, CMefford

The pilot test will include the installation of two injection wells (IW-1 and IW-2 on Figure 3-2), each at a depth of approximately 25 to 30 feet below ground surface. The screen length for each of the injection wells will be 5 feet. In addition to the monitoring well cluster that will be installed in this area as part of the pre-design investigation (MW-1, see Figure 3-2), two additional well clusters will be installed for monitoring during the pilot test. The two clusters (MW-A and MW-B on Figure 3-2) will each comprise three wells which will be installed to depths of approximately 25 feet, 45 feet and 60 feet below grade. Each monitoring well and injection well will be constructed of 2-inch diameter PVC with a 5-foot screen. The injection wells and monitoring wells will be installed using the hollow stem auger drilling method.

Injection wells IW-1 and IW-2 will be located cross-gradient and slightly upgradient of the MW-1 cluster, which will be installed as part of the pre-design investigation. The MW-1 wells will be utilized to evaluate cross-gradient migration of the permanganate during injection. Cluster MW-A will be installed approximately 20 feet directly downgradient of IW-1, and cluster MW-B will be installed approximately 40 feet directly downgradient of IW-2.

After construction, each injection well and monitoring well will be developed to ensure an adequate hydraulic connection to the aquifer. Each well will be developed for a maximum of 2 hours. It is assumed that water generated during the well development process will be contained and subsequently discharged to the Nassau County sanitary sewer system, with Nassau County approval.

During installation of monitoring well cluster MW-A, one subsurface soil sample will be collected from each of the screened intervals and analyzed for TAL metals and hexavalent chromium. As discussed in Section 3.2.1, the soil samples will be obtained using decontaminated split spoons.

The locations of IW-1 and IW-2 were selected to get maximum cross-gradient distance between the injection points, while providing sufficient space to install monitoring wells at

appropriate distances to evaluate downgradient and cross-gradient migration of the permanganate. Each monitoring well cluster also includes multiple screen depths to allow evaluation of the permanganate's vertical migration. The injection will begin with IW-1, and monitoring will be conducted at the MW-1 (to evaluate cross-gradient migration) and MW-A (to evaluate downgradient migration) well clusters. MW-1 is located slightly farther away from IW-1 than it is from IW-2, so that if the injection in IW-1 does not reach MW-1, then the second injection into IW-2 will allow a second chance with a closer injection point to obtain a better determination of the cross-gradient migration distance. Similarly, the distance from IW-1 to MW-A is less than from IW-2 to MW-B. This is so that the downgradient migration can be monitored at different distances from the injection points, while at the same time yielding a better evaluation of the maximum downgradient distribution.

The total volume of oxidant to be injected during the pilot test will be determined during the development of the pilot test specifications. The volume of oxidant that will be injected into IW-1 will be conservative and will be calculated to overcome the estimated soil oxidant demand (based on the treatability study performed in 2004) to reach monitoring well clusters MW-1 and MW-A plus a 10% contingency. Injection in IW-1 is expected to take approximately 2 to 3 days. Based on an estimated groundwater flow of 2.5 feet per day (as determined during the RI), it is estimated that it will take no more than approximately 8 days for the permanganate to migrate to the MW-A cluster. After completion of the injection at IW-1, all monitoring wells (MW-1, MW-A and MW-B clusters) and IW-2 will be monitored daily for water levels and field parameters, including temperature, DO, turbidity, ORP, conductivity, permanganate level and pH, until permanganate or elevated ORP is detected in a well. Monitoring will continue in the wells in which permanganate or elevated ORP has not been detected. Monitoring wells furthest from the injection well will be monitored first.

Once permanganate, and/or elevated ORP levels (50% increase above pre-injection levels) are detected in the MW-A cluster, permanganate injection will be implemented at IW- 2. The volume of oxidant that will be injected into IW-2 will be conservative and will be calculated to overcome the estimated soil oxidant demand (based on the treatability study performed in 2004) to reach monitoring well cluster MW-B plus a 10% contingency. Since a larger volume of

permanganate will be injected into this well, the injection is estimated to take approximately 5 days. It is estimated that it will take no more than approximately 15 days for the permanganate to migrate to the MW-B cluster. Monitoring of the MW-B wells and all other monitoring wells not impacted by the IW-1 injection will be conducted daily as described above. Once permanganate is detected in the MW-B cluster, daily monitoring will be discontinued, and field parameters will be monitored and samples for chemical analysis will be collected at intervals of 2 weeks, 4 weeks, 6 weeks and 9 weeks following the injection in IW-2 in monitoring well clusters MW-1, MW-A and MW-B. The monitoring will allow for evaluation of the dispersion of the oxidant and the effectiveness of the oxidant at reducing the contaminants of concern in groundwater. Groundwater samples will not be collected for chemical analysis or monitored for field parameters if the presence of permanganate is noted (pink or purple color identified during purging) or if a 50% increase in ORP is detected in the well. Groundwater samples will be collected using low flow procedures, and purge water will be contained for discharge to Nassau County sanitary sewer system. Each sample will be analyzed for TCL VOCs, TAL metals, hexavalent chromium and chloride. Samples will not be collected for chemical analysis if the well exhibits a purple color. As noted above, field parameters, including water level, residual permanganate (using field photometer), pH, ORP, DO, turbidity and temperature, will also be measured at the time of sample collection.

In order to evaluate potential soil vapor impacts from the pilot test, it is anticipated that four soil vapor monitoring points will be installed as part of the pilot study. These points will be installed 5 feet above the water table and will be constructed of 1-inch PVC casing and 2 feet of well screen. These points will be monitored prior to injection and 24 hours after the initial injection. Prior to sample collection, the probes will be purged using a photoionization detector (PID) to evaluate, in real time, whether significant levels of VOCs are present in the soil vapor. Samples will be collected using Summa canisters, at a maximum flow rate of 0.2 liters per minutes, and analyzed for VOCs using USEPA Method TO-15. If necessary, these points will also be monitored 9 weeks after injection, concurrent with the groundwater sampling at that time. Costs for the 9-week sampling event are not included in the project budget estimate. During each sampling event, one ambient air sample will also be collected. Duplicate soil vapor

samples will not be collected during these events. As a result, it is anticipated that eight soil vapor samples and two ambient air samples will be collected and analyzed for VOCs.

The scope of work for the pilot test is subject to change based on further development of the scope of work during performance of the pre-design investigation.

3.2.10 Pilot Test Report

After completion of the pilot test and receipt of the analytical data from all rounds of groundwater and soil vapor/ambient air monitoring, a letter report will be prepared describing the results of the pilot test. A draft report will be provided to NYSDEC 4 weeks after receipt of the last round of sampling data. The report will include a description of the pilot test, notation of any deviations from the work plan, interpretation of the data, conclusions and recommendations, with special consideration of any factors that may influence the remedial design or full-scale implementation of the selected remedy.

3.3 Task 3 - OU1 In-Situ Chemical Oxidation - Plans and Specifications

Draft, pre-final and final specifications and drawings will be prepared for the purpose of competitively bidding the full-scale chemical oxidation remedial construction in accordance with the NYSDEC Standard Contract Documents. The design documents will conform to the selected remedy in the Record of Decision, and will conform to New York State laws, rules, regulations and guidelines.

The specifications will contain contractor submittal requirements, including preparation of a project schedule; site-specific Sampling and Analysis Plan (SAP), including details for verification sampling analysis and reporting; site-specific Quality Assurance/Quality Control (QA/QC) Plan; a site-specific Health and Safety Plan (HASP) which will include a community air monitoring plan; and operations, maintenance and monitoring plan. The specifications will also include requirements for mobilization/demobilization, site preparation and restoration, waste management and disposal, and site security. In addition, the Contract Documents will contain a

bid sheet, estimated quantities for each bid item, and a maximum time period for substantial completion and final completion.

The design documents will specify requirements for the following:

- Site preparation;
- Injection of oxidant to treat VOC-contaminated groundwater in the unconsolidated aquifer at predetermined locations and depths;
- Monitoring the success and effectiveness of the remedy;
- Maintenance of traffic (as required);
- Various permit requirements;
- Construction of new monitoring wells for long-term monitoring of the effectiveness of the remediation;
- Soil vapor and/or indoor air monitoring, if required;
- Noise, odor and dust controls; and
- Site restoration.

3.3.1 Preliminary Design Submittal (35% Complete)

At the option of NYSDEC, a preliminary design submittal will be prepared. If required, the preliminary design submittal will consist of preliminary drawings and an outline of the specifications and will be submitted to the NYSDEC when the design is approximately 35% complete. The preliminary drawing set will include a title sheet, index of drawings with symbols and abbreviations, existing conditions plan showing known utilities and preliminary plan showing the area to be targeted for oxidant injection. Three copies of the preliminary design package will be provided to NYSDEC for review and comment.

Supporting documentation, including the basis for design, supporting data, documentation and design calculations, will be summarized in a letter report. The letter report will also identify potentially impacted property owners and property rights, and include a

preliminary list of anticipated temporary or permanent easements, rights-of-way and permits necessary to perform the remediation, and identification of non-property permits with which the remediation must be in substantial compliance. In consultation with NYSDEC, D&B will identify all necessary permits or permit equivalents. The contractor performing the work will be required to obtain the identified permits. NYSDEC will obtain access agreements and/or easements.

3.3.2 Intermediate Design Submittal (65% Complete)

The intermediate design submittal will consist of drawings and specifications and will be submitted to the NYSDEC when the design is approximately 65 percent complete. Three copies of the intermediate design package will be provided to NYSDEC for review and comment.

3.3.3 Engineering Design Report

A draft Engineering Design Report will be prepared and submitted with the pre-final design (discussed below). The Engineering Design Report will present the results of the pre-design study, including documentation of field activities, notation of any deviations from the approved work plan, a presentation of the data collected, interpretation of the data and conclusions, and recommendations appropriate to the site, including further investigation, if necessary. The pilot test report will be included as an appendix to the Engineering Design Report.

Additionally, the Engineering Design Report will present a description of the major elements of the project, the basis of design, and assumptions and uncertainties associated with the design effort. A draft Engineering Design Report will be submitted for NYSDEC review and comment. The draft Engineering Design Report will be revised based on NYSDEC comments.

3.3.4 Pre-Final and Final Design Submittal

Upon completion of the design documents, four copies of the pre-final plans and specifications and Engineering Design Report will be submitted to NYSDEC for final review. Each copy of the bid package will include a complete set of drawings, a complete specifications package, bid forms, measurement and payment provisions and NYSDEC Standard Contract Documents.

NYSDEC comments will be incorporated into the final plans and specifications. After approval, up to 50 copies of the final Contract Documents will be provided to the NYSDEC. In addition, an electronic copy in Portable Document Format (PDF) will be provided. The final drawings and specifications will be sealed and signed by a professional engineer licensed to practice in New York State. For budget purposes, it is assumed that each set of the Contract Documents will be comprised of 1,000 double-sided pages and ten 30-inch by 40-inch drawings.

3.3.5 Project Cost Estimate

A detailed construction, operation and maintenance cost estimate for the project will be prepared under this subtask. The estimate will be prepared on a bid item basis, consistent with the bid schedule in the Contract Documents, in order to provide a cost estimate for each bid item. Based upon comments from the NYSDEC, D&B will revise and submit the final cost estimate with the final drawings and specifications. The project cost estimate will be sealed and signed by a Professional Engineer licensed to practice in New York State.

3.4 Task 4 - OU1 SVE System Modification - Plans and Specifications

Draft, pre-final and final specifications and drawings will be prepared for the purpose of competitively bidding the enhancement of the existing SVE system in accordance with the NYSDEC Standard Contract Documents. The design documents will conform to the selected remedy in the Record of Decision, and will conform to New York State laws, rules, regulations and guidelines.

The specifications will contain contractor submittal requirements, including preparation of a project schedule; site-specific SAP, including details for verification sampling analysis and reporting; QA/QC plan; and a site-specific HASP which will include a community air monitoring plan; and operations, maintenance and monitoring plan. The specifications will also include requirements for mobilization/demobilization, site preparation and restoration, waste management and disposal, and site security. In addition, the Contract Documents will contain a bid sheet, estimated quantities for each bid item, and a maximum time period for substantial completion and final completion.

The design documents will specify requirements for the following:

- Site preparation;
- Construction of the enhanced SVE system;
- Monitoring the success and effectiveness of the remedy;
- Maintenance of traffic (as required);
- Various permit requirements;
- Construction/collection of new monitoring points for monitoring of the effectiveness of the remediation;
- Soil vapor and/or indoor air monitoring, if required;
- Noise, odor and dust controls; and
- Site restoration.

3.4.1 Preliminary Design Submittal (35% Complete)

At the option of NYSDEC, a preliminary design submittal will be prepared. If required, the preliminary design submittal will consist of preliminary drawings and an outline of the specifications and will be submitted to the NYSDEC when the design is approximately 35% complete. The preliminary drawing set will include a title sheet, index of drawings with symbols

and abbreviations, existing conditions plan showing known utilities and preliminary plan showing the area to be targeted for oxidant injection. Three copies of the preliminary design package will be provided to NYSDEC for review and comment.

Supporting documentation, including the basis for design, supporting data, documentation and design calculations, will be summarized in a letter report. The letter report will also identify potentially impacted property owners and property rights, and include a preliminary list of anticipated temporary or permanent easements, rights-of-way and permits necessary to perform the remediation, and identification of non-property permits with which the remediation must be in substantial compliance. In consultation with NYSDEC, D&B will identify all necessary permits or permit equivalents. The contractor performing the work will be required to obtain the identified permits. NYSDEC will obtain access agreements and/or easements.

3.4.2 Intermediate Design Submittal (65% Complete)

The intermediate design submittal will consist of drawings and specifications and will be submitted to the NYSDEC when the design is approximately 65 percent complete. Three copies of the intermediate design package will be provided to NYSDEC for review and comment.

3.4.3 Engineering Design Report

A draft Engineering Design Report will be prepared and submitted with the pre-final design (discussed below). The Engineering Design Report will present the results of the pre-design study, including documentation of field activities, notation of any deviations from the approved work plan, a presentation of the data collected, interpretation of the data and conclusions, and recommendations appropriate to the site, including further investigation, if necessary. The pilot test report will be included as an appendix to the Engineering Design Report.

Additionally, the Engineering Design Report will present a description of the major elements of the project, the basis of design, and assumptions and uncertainties associated with the design effort. A draft Engineering Design Report will be submitted for NYSDEC review and comment. The draft Engineering Design Report will be revised based on NYSDEC comments.

3.4.4 Pre-Final and Final Design Submittal

Upon completion of the design documents, four copies of the pre-final plans and specifications and Engineering Design Report will be submitted to NYSDEC for final review. Each copy of the bid package will include a complete set of drawings, a complete specifications package, bid forms, measurement and payment provisions and NYSDEC Standard Contract Documents.

NYSDEC comments will be incorporated into the final plans and specifications. After approval, up to 50 copies of the final Contract Documents will be provided to the NYSDEC. In addition, an electronic copy in PDF will be provided. The final drawings and specifications will be sealed and signed by a professional engineer licensed to practice in New York State. For budget purposes, it is assumed that each set of the Contract Documents will be comprised of 1,000 double-sided pages and ten 30-inch by 40-inch drawings.

3.4.5 Project Cost Estimate

A detailed construction, operation and maintenance cost estimate for the project will be prepared under this subtask. The estimate will be prepared on a bid item basis, consistent with the bid schedule in the Contract Documents, in order to provide a cost estimate for each bid item. Based upon comments from the NYSDEC, D&B will revise and submit the final cost estimate with the final drawings and specifications. The project cost estimate will be sealed and signed by a Professional Engineer licensed to practice in New York State.

3.5 Task 5 - Installation of Sub-Slab Depressurization Systems

The need for the installation of sub-slab depressurization systems for the residential and commercial properties in the site vicinity will be determined by an evaluation of the Soil Vapor Intrusion Investigation (results pending). As provided in the Work Assignment, it is assumed that systems will be installed at 10 properties, including all homes that are located on the eastern side of Dutchess Street between Maple Avenue and Davis Street. The sub-slab depressurization systems will meet NYSDOH requirements.

The services to be provided by D&B under this task include the design and implementation of multiple (up to 10) sub-slab depressurization (SSD) systems to address potential indoor air quality issues in the residential properties immediately adjacent to the Jimmy's Dry Cleaner site located at 61 Nassau Road in Roosevelt, New York.

3.5.1 Preparation of Request for Proposal

A Request for Proposal (RFP) comprised of performance-based design specifications will be prepared to obtain competitive bids for construction, start-up and performance testing of multiple (up to 10) sub-slab depressurization systems (SSD) in buildings in the vicinity of the site, as determined by the NYSDEC. The RFP will specify general requirements for the installation of each sub-slab depressurization system conforming to all applicable New York State laws, rules, regulations and guidelines. The major elements of the RFP will include, but are not limited to, the following:

- Sealing all cracks, holes, etc. within the existing concrete floor slab of each existing residence;
- Installation of an active sub-slab depressurization system as a permanent and integral addition to each existing residences; and
- Start-up and performance testing of each sub-slab depressurization system.

For budgetary purposes, the following has been assumed in establishing costs for the installation of each active sub-slab depressurization system:

- Installation of one (1) suction point through the slab of each residence;
- Installation of piping runs to carry soil vapors from below the floor slab to an externally mounted exhaust fan;
- Installation of exhaust piping after the fan to above the eaves of each building;
- Sealing all cracks, holes, etc. within the existing concrete floor slab (up to 100 square feet) of each residence;
- Costs associated with the installation of additional extraction points, drain tile depressurization, hollow block wall depressurization, sump pit depressurization, submembrane depressurization to address dirt floors and crawl spaces, vent stack roof penetrations, etc. will be provided on as needed basis and will be considered as an extra.
- Costs associated with the abatement of asbestos containing materials (e.g., pipes, floors, insulation, etc.) that may be required during the installation of the SSD systems will be provided on as needed basis and will be considered as an extra.

The draft RFP will be submitted to the NYSDEC for review and comment. For budget purposes, it is assumed that one set of comments will be addressed by D&B prior to preparation of the final RFP package and subsequent distribution. The final RFP will be sent to qualified subcontractors. A pre-bid meeting will be held at the sites. Once bids are received, D&B will provide a summary of the bids to NYSDEC and finalize an agreement with the selected subcontractor.

3.5.2 Construction Inspection

Full-time on-site inspection services will be provided by D&B during the construction, start-up and performance testing of each system. The selected subcontractor's work will be monitored for conformance with the specifications and approved submittals by inspecting the construction, start-up and performance testing activities. Complete and detailed records regarding the oversight activities will be maintained. The records will include:

- Daily Construction Logs: At a minimum, the daily construction logs shall include a summary of the work completed, on-site visitors and important conversations, listing and use of Contractor's personnel, material and equipment that allows for quantification of the Contractor's production and any unusual circumstances encountered (weather conditions, differing site conditions, environmental problems, etc.).

- Construction Photographs: Photographs will be taken before work begins, during its progress and at the completion of the work. Each photograph will be labeled to show the project name, site number, short description of the view, photograph number and date taken.

Upon completion of the work, D&B will prepare a letter report summarizing the work performed. All related project records shall be included as appendices to the letter report. For budget purposes, it is assumed that the construction period for each system will consist of 2 business days.

3.5.3 Performance Monitoring

Performance monitoring services will be initiated by D&B approximately 1 month after each sub-slab depressurization system is placed into routine operation to inspect its physical operation and confirm that the site-specific performance objectives are being achieved. The scope of performance monitoring services is described below:

- Visual inspection of the complete system (e.g., ventilation fan, piping, warning device, labeling on systems, etc.). Inspection of the complete system will include potential identification of leaks in the system by monitoring operating conditions for appropriate vacuum/flow and remote inspection of the system discharge point to verify that no air intakes have been located nearby.

Upon completion of the performance monitoring activities, D&B will prepare a letter summarizing the results of testing and monitoring performed. For budget purposes, it is assumed that the performance testing for each site will be achieved in 4 hours.

3.6 Task 6 - Pre-Award Services

D&B will provide pre-award services in conjunction with the competitive bidding of each phase of the remedial construction project (chemical oxidation and SVE system enhancement), if requested by the NYSDEC. The services under this task have been organized into three subtasks as described below. It is assumed that advertising for bids and distribution of bid documents and any addenda will be performed by the NYSDEC. D&B will provide assistance, as needed, with the content of advertisements and addenda.

3.6.1 Pre-Bid Conference

D&B will attend and assist the NYSDEC with an on-site pre-bid conference and site walkover. At the pre-bid conference, D&B will emphasize to the prospective bidders important aspects of the project. D&B will prepare and submit meeting minutes for the pre-bid conference and respond to technical questions regarding the plans and specifications.

3.6.2 Addenda

D&B will prepare written responses to questions raised at the pre-bid conference and any necessary addenda to the plans and specifications for the timely transmittal by the NYSDEC to the prospective bidders. D&B will provide up to 50 copies of addenda to the NYSDEC for distribution to the bidders. For budget purposes, it is assumed that one addendum will be prepared.

3.6.3 Bid Review

Following the receipt of bids, D&B will perform a technical evaluation of the bids and prepare a tabulation of the bid prices that will be submitted to the NYSDEC. Additionally, as part of this subtask, D&B will review the apparent lowest bidder's technical pre-award submittals to determine conformance with the requirements of the Contract Documents.

3.6.4 Additional Requirements

D&B will submit monthly cost control reports, monthly status reports and monthly progress/schedule compliance reports.

3.6.5 Public Meetings

If requested by the NYSDEC, D&B will attend one public meeting to answer questions regarding the project design, construction techniques and project schedule. D&B will also prepare minutes of the meeting and will provide them to the NYSDEC. For budget purposes, it is assumed that one public meeting will be held.

3.6.6 Site Management Plan

D&B will develop and submit three copies of a draft Site Management Plan that provides for the long-term maintenance of the site and identifies technical requirements to be included in the institutional controls placed on the property. These include a delineation of areas of residual contaminated soil that may be excavated from the site during future development. The plan will address what characterization would be necessary for soil excavated from the site during future development and, where applicable, requirements for disposal/reuse of that soil in accordance with NYSDEC regulations. The plan will also evaluate the potential for vapor intrusion for any buildings developed on the site, including provisions for mitigations of any impacts identified, and the plan will identify any site use restrictions. Portions of the work product associated with this subtask will be generic in nature, since it will be prepared prior to remedial construction. Post-construction details can be subsequently appended to the Site Management Plan.

4.0 PROJECT MANAGEMENT

4.1 Project Schedule and Key Milestones/Reports

A project schedule for the OU1 remedial design for the Jimmy's Dry Cleaners site is provided on Figure 4-1. Key milestones are identified in order to monitor work progress. Specific deadlines for completion of tasks and subtasks are established throughout the project to ensure timely completion of work. The following is the list of the milestones for each of the two currently identified remedies this project:

1. Submittal of Draft Work Plan
2. Submittal of 35% Plans and Specifications (if required by NYSDEC)
3. Submittal of 65% Plans and Specifications
4. Submittal of Engineering Design Report
5. Submittal of Pre-Final Contract Documents and Pre-Final Cost Estimate
6. Submittal of Final Contract Documents and Final Cost Estimate

4.2 Project Management, Organization and Key Technical Personnel

Dvirka and Bartilucci Consulting Engineers will be the prime consultant responsible for preparation of the remedial design. Subcontractors that are expected to be used on the project include the following:

- YEC, Inc. (MBE) - surveying
- Sea Breeze Technologies, LLC - peer review of selected technical documents
- Delta Well and Pump (WBE) - drilling services
- Mitkem Corporation (MBE) - chemical analyses
- To be determined - chemical oxidation pilot test subcontractor

Figure 4-1
PROJECT SCHEDULE
JIMMY'S DRY CLEANER OU1 REMEDIAL DESIGN

	Task	Start Date	Duration (weeks)	Completion Date
Task 1 - Work Plan Preparation		7/6/06		
1	Work Assignment Acceptance		0	7/6/06
2	Preparation of Draft Work Plan		16	10/26/06
3	NYSDEC Review of Draft Work Plan		4	11/23/06
4	Preparation of Final Work Plan		14	3/1/07
5	NYSDEC Review of Final Work Plan		4	3/29/07
6	Notice to Proceed		1	6/8/07
Task 2 - Pre-Design Investigation		6/15/07		
7	Temporary Wells[1]		8	8/10/07
8	Groundwater Monitoring Well Installation		4	9/7/07
9	Groundwater Sampling1		1	9/14/07
10	Chemical Oxidation Pilot Test Field Work		2	9/28/07
11	Contractor Procurement			
	Preparation of Draft Bid Documents		4	7/13/07
	NYSDEC Review		2	7/27/07
	Preparation and Transmittal of Final Bid Documents		3	8/17/07
	Receipt and Review of Bids		3	9/7/07
	Contractor Selection and Contract Execution		2	9/21/07
12	Conduct Pilot Test and Follow-up Sampling		12	12/14/07
13	Draft Pilot Test Report		4	1/11/08
14	NYSDEC and D&B Review of Draft Report		1	1/18/08
15	Final Pilot Test Report		2	2/1/08
16	NYSDEC and D&B Review of Final Report		1	2/8/08
Task 3 - OU1 In-Situ Chemical Oxidation - Plans and Specifications[2]		2/8/08		
17	Preliminary (30%) Design		6	3/21/08
18	Intermediate (60%) Design (if requested)[3]		4	4/18/08
19	Pre-Final and Final Design[3]		4	5/16/08
20	Engineering Design Report[2]		0	5/16/08
Task 4 - OU1 SVE - Plans and Specifications[2]		2/8/08		
21	Preliminary (30%) Design		6	3/21/08
22	Intermediate (60%) Design (if requested)[3]		4	4/18/08
23	Pre-Final and Final Design[3]		4	5/16/08
24	Engineering Design Report[2]		0	5/16/08
Task 5 - Installation of Sub-Slab Depressurization Systems				[4]
Task 6 - Pre-Award Services				[4]
25	Copying of Bid Documents			[4]
26	Pre-Bid Conference			[4]
27	Addendum to Contract Documents (if required)			[4]
28	Bid Review and Contractor Selection			[4]
29	Public Meetings			

[1] Includes laboratory analysis with 4-week turnaround time.

[2] Item to be conducted concurrently with other items under this task.

[3] It is assumed that NYSDEC review of previous submittals will occur concurrently with this item.

[4] Schedule to be determined.

- To be determined – Sub-slab Depressurization Systems
- Coastal Environmental Group, Inc. (WBE) – Waste Disposal
- Hager Richter Geoscience (WBE) – Utility Survey
- Jamaica Blueprint Company, Inc. (WBE) - document reproduction

The project organization, illustrating both management and project responsibility functions for the project team and key personnel, is provided on Figure 4-2.

REMEDIAL DESIGN FOR JIMMY'S CLEANERS SITE
ROOSEVELT, NEW YORK
PROJECT TEAM ORGANIZATION CHART

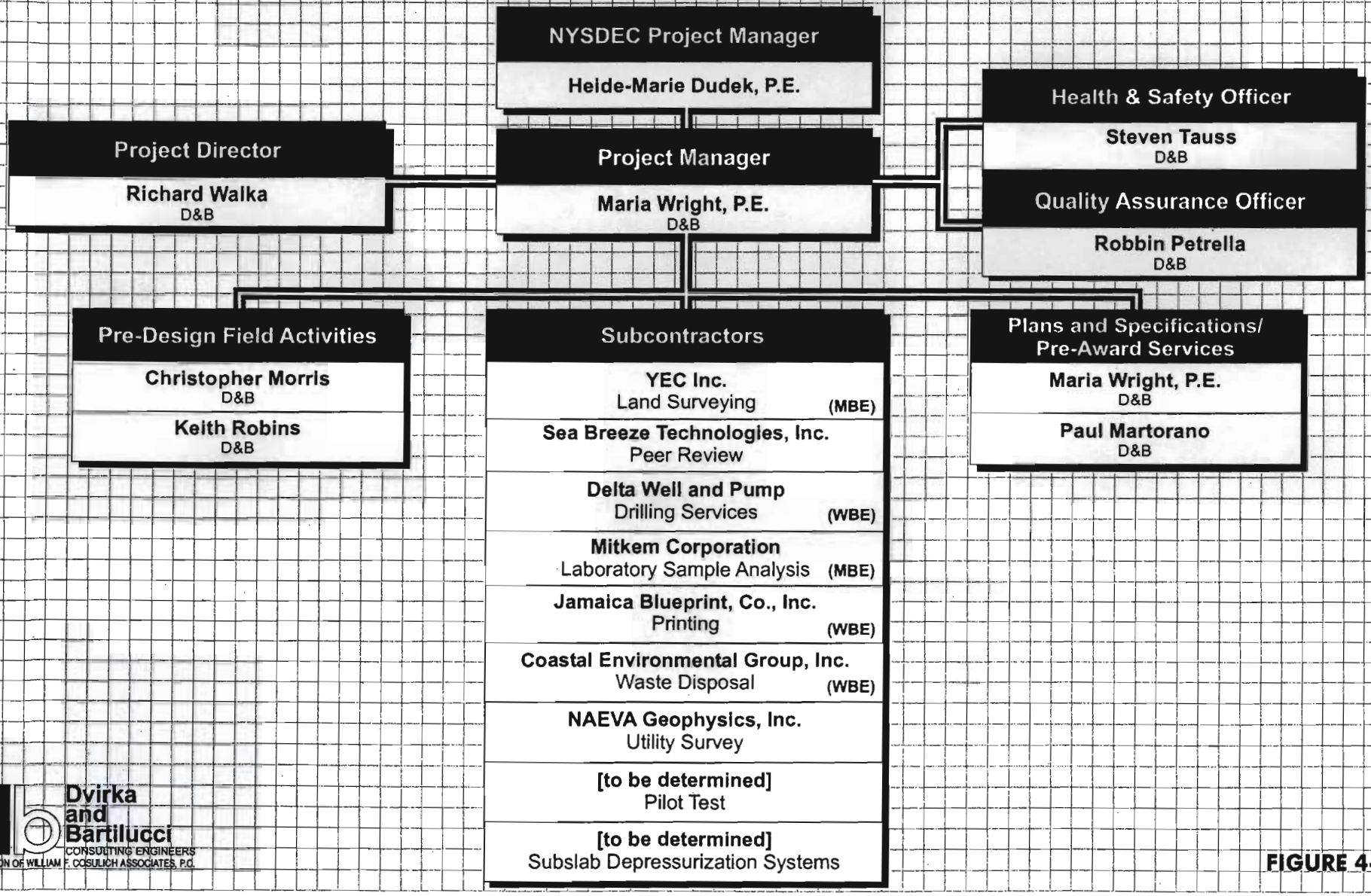

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FIGURE 4-2

RLA/JimsDryCleaners2548OR(03/05/07)

5.0 SITE-SPECIFIC QUALITY ASSURANCE/QUALITY CONTROL PLAN

5.1 Sampling Scope and Sampling Procedures

The pre-design field activities for the Jimmy's Dry Cleaner site OU1 remedial design program will include collection of groundwater samples from temporary wells and from new monitoring and injection wells, and collection of soil samples. In addition, soil vapor and ambient samples will be collected during the pilot test. The details for these sample collection methods are provided below.

5.1.1 Groundwater Sampling Procedures (Permanent and Temporary Wells)

Groundwater samples will be collected using low flow procedures, as follows:

1. Measure the depth to water in the well using a decontaminated water level indicator.
2. Slowly lower the pump, safety cable, tubing and electrical lines into the screen zone of the well. The pump intake must be kept at least 2 feet above the bottom of the well to prevent disturbance and resuspension of any sediment present in the bottom of the well. Record the depth to which the pump is lowered.
3. Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.
4. Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawndown of 0.3 foot or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.
5. During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, ORP and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows:
   - ±0.1 for pH
   - ±3% for specific conductance (conductivity)

- ±10 mv for redox potential
- ±10% for DO and turbidity

Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

6. Remove the laboratory precleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form.

7. Obtain a sample from the pump discharge using the lowest sustainable flow rate, taking care not to spill on the outside of the container or overfill container, and replace the cover on the sample container. Samples for volatile organic analyses will have no air space in the sample vial prior to sealing. This is done by filling the vial such that there is a meniscus on top. Carefully slide the septum, Teflon side down, onto the top of the vial and cap the vial. Check for bubbles by turning the vial upside down and tapping it lightly. If bubbles appear, reopen the vial, remove the septum and add more sample (or resample). Replace the septum, recap and check for bubbles. Continue until vial is bubble-free.

8. Return sample containers to iced sample cooler. Sample coolers will be shipped via overnight courier under chain of custody procedures.

9. Decontaminate the pump.

5.1.2 Soil Sampling Procedures

1. Be certain that the sample location is noted on Location Sketch.

2. Be certain that the sampling equipment (split spoon) has been decontaminated utilizing the procedures outlined in Section 5.8.

3. Remove laboratory pre-cleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form.

4. Drill into the soil to the desired depth and drive the split spoon sampler.

5. Retrieve the split spoon and immediately after opening the split spoon, obtain an organic vapor measurement with a PID or FID and fill out Boring Log Form.

6. Remove a sample aliquot from the split spoon using a disposable scoop or sterile wooden tongue depressor, place into the open sample container and replace the container cover.

7. Return the sample container to the cooler.

8. If reusable, decontaminate the sampling equipment according to the procedures described in Section 5.8.

9. Place all disposable personal protective equipment and disposable sampling equipment into a 55 gallon drum and store in a secure area (fenced, if possible).

5.1.3 Soil Vapor Sampling Procedures

The following procedures will be utilized for collection of soil vapor samples:

1. Be certain that the sample location is noted on Location Sketch.

2. Remove laboratory-supplied sample container from shipping container, and measure and record initial vacuum reading.

3. Seal the area around the soil vapor probe and apply helium as a tracer gas, in accordance with NYSDOH guidance.

4. Purge one to three probe volumes, at a maximum flow rate of 0.2 liters per minute, using purge pump. Measure the helium concentration in ambient air and soil vapor (after purging) using a direct reading helium meter.

5. If the measured helium concentrations are similar, attach pre-calibrated regulator (if necessary), connect soil vapor sample teflon or teflon-lined tubing to sample container and open container valve. If the helium concentration in soil vapor is significantly higher than that detected in ambient air, the integrity of the probe seal should be evaluated and any necessary repairs made prior to retesting and sampling.

6. At end of sample collection period, close container valve, disconnect sample tubing, and measure and record final vacuum reading.

7. Return sample container to shipping container.

5.1.4 Ambient Air Sampling Procedures

The following procedures will be utilized for collection of ambient air samples:

1. Be certain that the sample location is noted on Location Sketch.

2. Remove laboratory-supplied sample container from shipping container, and measure and record initial vacuum reading.

3. Attach pre-calibrated regulator (if necessary) and open container valve.

4. At end of sample collection period, close container valve, and measure and record final vacuum reading.

5. Return sample container to shipping container.

5.2 Analytical Parameters

The groundwater samples will be analyzed for TCL VOCs and chloride, and the soil samples will be analyzed for TCL VOCs and TAL metals as identified in the NYSDEC 2000 Analytical Services Protocol (ASP) and USEPA Contract Laboratory Program (CLP) Statement of Work 5/99 (OLM04.2 and ILM04.0). All sample analyses will be performed by a laboratory approved under the NYSDOH Environmental Laboratory Approval Program (ELAP).

Table 5-1 presents a summary of the parameters/sample fraction to be analyzed together with the sample location, type of sample, sample matrix, type of sample container, method of sample preservation, holding time and analytical method. Category B deliverables are required for all analytical results in order to allow for complete validation of the results, if warranted.

5.3 Matrix Spikes/Matrix Spike Duplicates and Matrix Spike Blanks

Matrix spike samples are quality control procedures, consistent with 2000 NYSDEC ASP specifications, used by the laboratory as part of its internal Quality Assurance/Quality Control program. The matrix spikes (MS) and matrix spike duplicates (MSD) are aliquots of a designated sample (water or soil), which are spiked with known quantities of specified compounds. MS/MSD samples are used to evaluate the matrix effect of the sample upon the analytical methodology, as well as to determine the precision of the analytical method used. Samples to be analyzed as MS/MSDs may be designated in the field (that is, additional aliquots of a particular sample from the site may be collected) or they may be selected by the laboratory.

Table 5-1

JIMMY'S DRY CLEANERS SITE
ROOSEVELT, NEW YORK
SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
Soil Sample Locations	Grab	Soil	Volatile Organics	20	Glass, clear/2 oz./2 Ichem 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	6/00 NYSDEC ASP, Method OLM04.2
		Soil	Metals	3	Glass, clear/4 oz. Ichem 200 series or equivalent	Cool to 4°C	26 days after VTSR for mercury, 6 months after VTSR for all others	6/00 NYSDEC ASP, Method ILM04.0
		Soil	Hexavalent Chromium	3	Glass, clear/4 oz. Ichem 200 series or equivalent	Cool to 4°C	24 hours after VTSR	6/00 NYSDEC ASP, Method 218.5
Temporary Wells	Grab	Groundwater	Volatile Organics	66	Glass, clear/20 mL/3 Ichem 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	6/00 NYSDEC ASP, Method OLM04.2
Monitoring Well Locations	Grab	Groundwater	Volatile Organics	13	Glass, clear/40 mL/3 Ichem 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	6/00 NYSDEC ASP, Method OLM04.2
	Grab	Groundwater	Metals	13	Plastic/1 L/1 Ichem 300 series or equivalent	HNO_3	26 days after VTSR for mercury, 6 months after VTSR for all others	6/00 NYSDEC ASP, Method ILM04.0
	Grab	Groundwater	Hexavalent Chromium	13	Plastic/1 L/1 Ichem 300 series or equivalent	Cool to 4°C	24 hours after VTSR	6/00 NYSDEC ASP, Method 218.5
	Grab	Groundwater	Chloride	13	Plastic/250 mL/1 Ichem 300 series or equivalent	Cool to 4°C	26 days after VTSR for analysis	6/00 NYSDEC ASP, Method 9253
Pilot Study Monitoring/ Injection Wells	Grab	Groundwater	Volatile Organics	87	Glass, clear/40 mL/3 Ichem 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	6/00 NYSDEC ASP, Method OLM04.2

Table 5-1 (continued)

JIMMY'S DRY CLEANERS SITE
ROOSEVELT, NEW YORK
SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
	Matrix Blank	Soil	Hexavalent Chromium	1	Glass, clear/4 oz./2 Ichem 200 series or equivalent	Cool to 4°C	24 hours after VTSR	6/00 NYSDEC ASP, Method 218.5

VTSR - Verified time of sample receipt at the laboratory.

*One trip blank will accompany shipment of aqueous samples requiring volatile organic compound analysis.
**One MS/MSD for each media for every 20 samples collected, or one every week if fewer than 20 samples.

A matrix spike blank is an aliquot of analyte-free water, prepared in the laboratory, and spiked with the same solution used to spike the MS and MSD. The matrix spike blank (MSB) will be subjected to the same analytical procedure as the MS/MSD and used to indicate the appropriateness of the spiking solution by calculating the spike compound recoveries. The procedure and frequency regarding the MS, MSD and MSB samples are defined in the NYSDEC ASP, and will be collected for groundwater samples only.

5.4 Field Blank (Field Rinsate Blank)/Equipment Blank

Based upon discussion with the NYSDEC, field blanks will not be required for field investigations in which dedicated, disposable sampling equipment (for example, bailers or sterile scoops) are being utilized for sample collection.

5.5 Trip Blanks (Travel Blanks)

The primary purpose of a trip blank is to detect other sources of contamination that might potentially influence contaminant values reported in actual samples, both quantitatively and qualitatively. The following have been identified as potential sources of contamination:

- Laboratory reagent water;
- Sample containers;
- Cross contamination in shipment;
- Ambient air or contact with analytical instrumentation during preparation and analysis at the laboratory; and
- Laboratory reagents used in analytical procedures.

A trip blank will consist of a set of 40 ml sample vials filled at the laboratory with laboratory demonstrated analyte free water. Trip blanks will be handled, transported and analyzed in the same manner as the samples acquired that day, except that the sample containers themselves are not opened in the field. Rather, these sample containers only travel with the

sample cooler. The temperature of the trip blanks will be maintained at 4°C while on-site and during shipment. Trip blanks will return to the laboratory with the same set of bottles they accompanied in the field.

The purpose of a trip blank is to control sample bottle preparation and blank water quality as well as sample handling. Thus, the trip blank will travel to the site with the empty sample bottles and back from the site with the collected samples in an effort to simulate sample handling conditions. Contaminated trip blanks may indicate inadequate bottle cleaning or blank water of questionable quality. Trip blanks will be implemented only when collecting water samples, including field blanks, and analyzed for VOCs only.

5.6 Method Blanks/Holding Blanks

A method blank is an aliquot of laboratory water or soil, which is spiked with the same internal and surrogate compounds as the samples. The purpose of the method blank is to define and determine the level of laboratory background contamination. Frequency, procedure and maximum laboratory containment concentration limits are specified in the 2000 NYSDEC ASP. A holding blank is an aliquot of analyte-free water that is stored with the environmental samples in order to demonstrate that the samples have not been contaminated during laboratory storage. This blank will be analyzed using the same analytical procedure as the samples.

5.7 Blind Duplicate Samples

Based on discussions with the NYSDEC, blind duplicates will not be required for soil vapor or groundwater samples.

5.8 Decontamination Procedures

Since dedicated disposable equipment will be utilized for soil vapor and ambient air sampling, field decontamination will not be conducted. During well purging, new, dedicated disposable polyethylene or polypropylene tubing will be used. The submersible pump will be

decontaminated before its first use on-site, between samples/wells and prior to being removed from the site. Pump decontamination will consist of washing the pump exterior with a solution of non-phosphate detergent and potable water, pumping a solution of non-phosphate detergent and potable water through the pump, followed by pumping clean potable water through it. Decontamination fluids will be contained, and it is assumed that they will be discharged to the Nassau County sanitary sewer system.

6.0 SITE-SPECIFIC HEALTH AND SAFETY PLAN

This section presents the site-specific health and safety information to supplement the generic Health and Safety Plan (HASP) included in the February 1996 draft "Remedial Investigation and Feasibility Study Generic Work Plan, Dry Cleaner Sites."

Project Name:	Jimmy's Dry Cleaner OU1 Site Study area encompasses the area between Nassau Road, Pleasant Avenue, Taylor Avenue, Davis Avenue Roosevelt, New York
Telephone:	Not available
Date of HASP Preparation	September 2006
Dates of Field Investigation:	To be determined
Project Objectives:	Investigate and characterize soil and groundwater contamination and conduct in-situ chemical oxidation pilot testing.

Project Organization:

	Name	Telephone
Project Director:	Richard Walka	(516) 364-9890
Project Manager:	Kenneth Wenz	(516) 364-9890
Health and Safety Officer (HSO):	Steven Tauss	(516) 364-9890
Field Operations Manager/ Alternate HSO:	Christopher Morris	(516) 364-9890
Field Subcontractors:	To be determined	

Medical Assistance:

Physician:	Plainview Medical Group, P.C.
Address:	100 Manetto Hill Road, Suite 205
	Plainview, NY 11803
Telephone:	(516) 822-2541

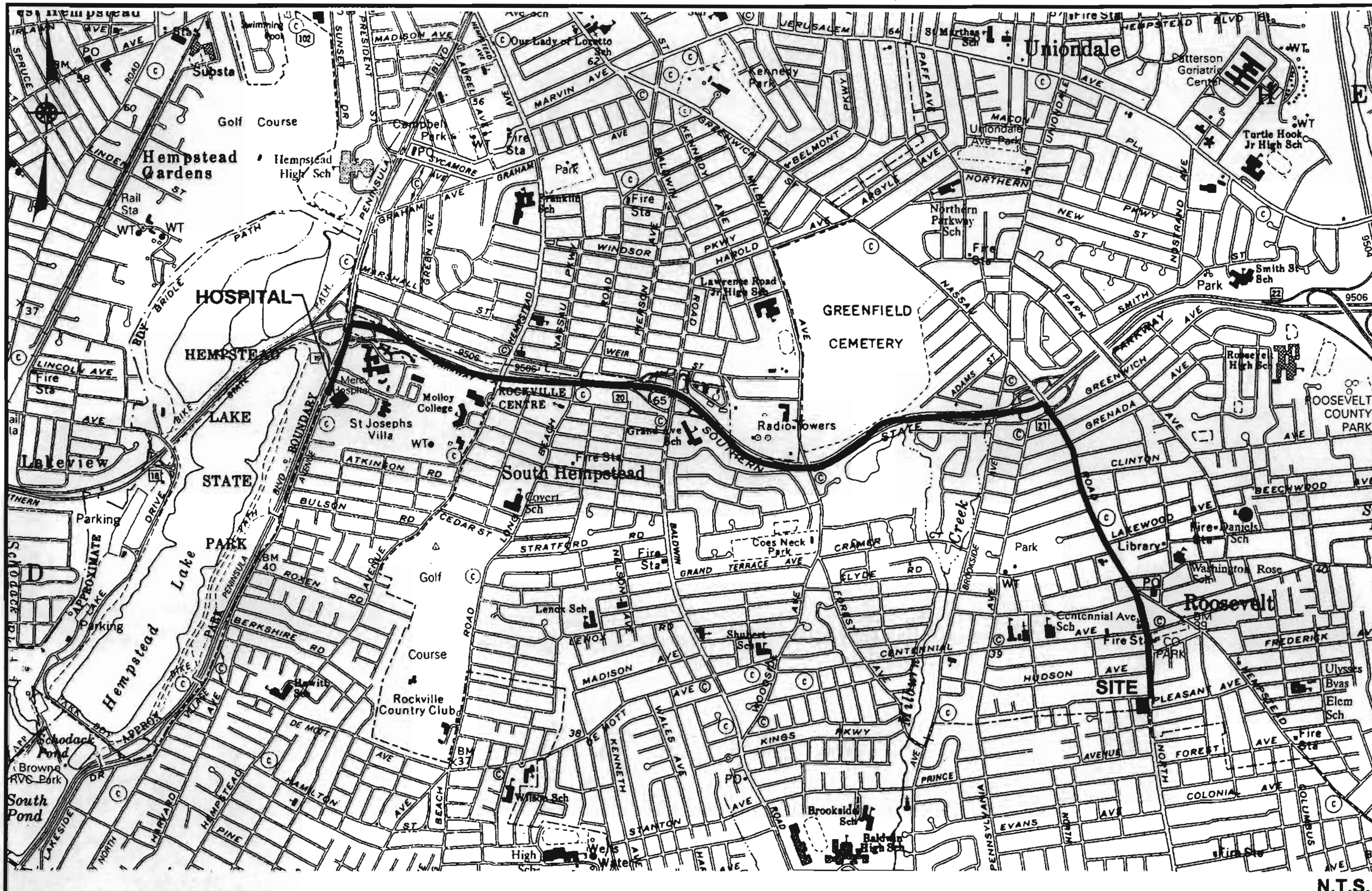
Hospital:	Mercy Medical Center
Telephone:	(516) 705-2525
Directions: (see Figure 6-1)	Proceed north on Nassau Road/North Main Street. Make a left onto Pine Street. Merge onto Southern State Parkway. Take exit 19S, Peninsula Boulevard south toward Rockville Centre. Merge onto Peninsula Boulevard and immediately bear left. Turn left at the second traffic light. Proceed to the main entrance.

Emergency Contacts:

Agency/Facility	Telephone	Emergency Telephone
EMS - Ambulance		911
Police Department	(516) 573-6100	911
Roosevelt Fire Department	(516) 378-9228	911 or (516) 378-9228
Hospital	(516) 705-2525	
Poison Control Center	Office/Administrative: (516) 663-4574	1-800-222-1222

Additional site-related information (including special hazards, site control, waste storage and disposal, personal protective equipment, decontamination area location, special engineering controls, etc.):

VOCs and dust will be monitored in the work zone during intrusive activities. If warranted, a Community Air Monitoring Plan will be implemented in accordance with the attached protocol.



Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

JIMMY'S DRY CLEANERS SITE
ROOSEVELT, NEW YORK

MAP TO HOSPITAL

FIGURE 6-1

F:\2548\2548-MAP.dwg, FIG6-1, 08/24/06 03:44:30 PM, LGlubiak

7.0 SCHEDULE 2.11 FORMS

SCHEDULE 2.11 (a)

Summary of Work Assignment Price
Jimmy's Dry Cleaner

Work Assignment Number: D004446-4

1.	Direct Salary Costs (Schedules 2.10 (a) and 2.11(b))	$136,586
2.	Indirect Costs (Schedule 2.10 (g))	$206,245
3.	Direct Non-Salary Costs (Schedules 2.11 (c) and (d))	$15,892

Subcontract Costs

Cost-Plus-Fixed-Fee Subcontracts (Schedules 2.11(e))

Name of Subcontractor	Services To Be Performed	Subcontract Price
YEC, Inc.	Surveying	$17,374
SeaBreeze Technologies LLC	Peer Review of Technical Documents	$15,215

4.	Total Cost-Plus-Fixed-Fee Subcontracts	$32,589

Unit Price Subcontracts (Schedules 2.11(f))

Name of Subcontractor	Services To Be Performed	Subcontract Price
Delta Well and Pump (WBE)	Drilling Services	$139,336
Contest Analytical Laboratories, Inc.(WBE)	Air Analysis	$2,322
Mitkem Corporation (MBE)	Sample Analysis	$24,355
Jamaica Blueprint Co., Inc. (WBE)	Reproduction Services	$13,087
Coastal Environmental Group, Inc.(WBE)	Waste Disposal	$8,900
NAEVA Geophysics, Inc.	Utility Survey	$3,175

5.	Total Unit Price Subcontracts	$191,175
6.	Subcontract Management Fee	$9,400
7.	Total Subcontract Costs (lines 4 + 5 + 6)	$233,164
8.	Fixed Fee (Schedule 2.10 (h))	$39,426
9.	Total Work Assignment Price (lines 1 + 2 + 3 + 7 +8)	$631,313

SCHEDULE 2.11 (b)
SUMMARY
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NSPE	IX	VIII	VII	VI	V	IV	III	II	I	TOTAL HOURS
as of 1/1/06	$61.60	$54.95	$51.32	$45.44	$36.10	$33.51	$29.09	$23.13	$18.10	
as of 1/1/07	$63.45	$56.50	$52.86	$46.80	$37.18	$34.52	$29.96	$23.82	$18.64	
as of 1/1/08	$65.99	$58.76	$54.97	$48.67	$38.67	$35.90	$31.16	$24.77	$19.39	
Task 1	3	0	0	72	62	0	36	32	0	205
Task 2	8	0	0	118	232	160	902	112	0	1,532
Task 3	8	0	8	144	232	0	0	774	0	1,166
Task 4	8	0	8	44	164	0	0	646	0	870
Task 5	4	0	4	28	4	0	292	58	0	390
Task 6	6	0	12	56	52	0	0	88	0	214
Subtotal 2006 Hours	3	0	0	72	62	0	36	32	0	205
Subtotal 2007 Hours	28	0	20	334	632	160	1,194	1,590	0	3,958
Subtotal 2008 Hours	6	0	12	56	52	0	0	88	0	214
Total Hours	37	0	32	462	746	160	1,230	1,710	0	4,377
Total Direct Labor Cost	$2,357	$0	$1,717	$21,629	$27,747	$5,523	$36,819	$40,794	$0	$136,586

SCHEDULE 2.11 (b)1

Direct Administrative Labor Hours Budgeted

Jimmy's Dry Cleaner

Work Assignment Number: D004446-4

NSPE	IX	VIII	VII	VI	V	IV	III	II	I	TOTAL HOURS
as of 1/1/06	$61.60	$54.95	$51.32	$45.44	$36.10	$33.51	$29.09	$23.13	$18.10	
as of 1/1/07	$63.45	$56.60	$52.86	$46.80	$37.18	$34.52	$29.96	$23.82	$18.64	
as of 1/1/08	$65.99	$58.86	$54.97	$48.68	$38.67	$35.90	$31.16	$24.78	$19.39	
Task 1	3	0	0	6	0	0	0	22	0	31
Task 2	2	0	0	2	0	0	0	56	0	60
Task 3	2	0	0	2	0	0	0	94	0	98
Task 4	2	0	0	2	0	0	0	94	0	98
Task 5	2	0	0	2	0	0	0	18	0	22
Task 6	2	0	0	2	0	0	0	28	0	32
Subtotal 2006 Hours	3	0	0	6	0	0	0	22	0	31
Subtotal 2007 Hours	8	0	0	8	0	0	0	262	0	278
Subtotal 2008 Hours	2	0	0	2	0	0	0	28	0	32
Total Hours	13	0	0	16	0	0	0	312	0	341
Total Direct Labor Cost	$824	$0	$0	$744	$0	$0	$0	$7,444	$0	$9,013

SCHEDULE 2.11(b)2
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
BREAKDOWN OF ADMINISTRATIVE
LOE HOURS

ADMIN ACTIVITY	WORK PLAN DEVELOPMENT														REVIEW WORK ASSIGNMENT (WA) PROGRESS																							
	Conflict of Interest Checks						Prepare 2.11 Schedules								Conduct Progress Reviews						Prepare Monthly Report & Update Schedules						MBE/WBE Activities								Program Management					
NSPE	IX	VIII	VII	VI	V	IV	VIII	VII	VI	V	IV	III	II	I	VIII	VII	VI	V	IV	III	VIII	VII	VI	V	IV	III	II	I	VIII	VII	VI	V	IV	III	II	I	IX	VIII	VII	VI	V	IV
Task 1	1								4														2																			
Task 2																							2																			
Task 3																							2																			
Task 4																							2																			
Task 5																							2																			
Task 6																							2																			
TOTAL	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ADMIN ACTIVITY	CAP PREPARATION												MISCELLANEOUS																							
	Prepare Monthly Cost Control Report & CAP								Oversee CAP				Update NSPE List								Equipment Use and Inventory				Word Proc. and Report Preparation				Total Adm. LOE (hrs)								
NSPE	VIII	VII	VI	V	IV	III	II	I	IX	VIII	VII	VI	VIII	VII	VI	V	IV	III	II	I	IV	III	II	I	IV	III	II	I	IX	VIII	VII	VI	V	IV	III	II	I
Task 1							10		2																		12		3	0	0	6	0	0	0	22	0
Task 2							24		2																		32		2	0	0	2	0	0	0	56	0
Task 3							20		2																		74		2	0	0	2	0	0	0	94	0
Task 4							20		2																		74		2	0	0	2	0	0	0	94	0
Task 5							10		2																		8		2	0	0	2	0	0	0	18	0
Task 6							8		2																		20		2	0	0	2	0	0	0	28	0
TOTAL	0	0	0	0	0	0	54	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	0	13	0	0	16	0	0	0	312	0

SCHEDULE 2.11 (c)
DIRECT NON-SALARY COSTS
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

ITEM	MAXIMUM REIMBURSEMENT RATE	UNIT	ESTIMATED NUMBER OF UNITS	TOTAL ESTIMATED COSTS
OUTSIDE SERVICES				
Sample Shipping	$75.00	package	15	$1,125.00
Express Mail	$15.00	package	10	$150.00
	$50.00	package	0	$0.00
	$80.00	package	6	$480.00
Photographs/Slides	$200.00	lump sum	1	$200.00
Printing	$50.00	report	0	$0.00
EQUIPMENT				
Personal Protective Equipment (Level D)	$16.62	person day	100	$1,662.00
TRAVEL				
Transportation (Personal Car)	$0.485	mile	608	$294.88
Van Rental	$400.00	week	17	$6,800.00
Car Rental	$50.00	day	0	$0.00
Gas	$10.00	day	85	$850.00
TOTAL DIRECT NON-SALARY COSTS				$11,561.88

Schedule 2.11(c)1
Direct Non-Salary Costs
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

Item	Reimbursement* Rate	Est. No. of Units (Task 1)	Total Cost (Task 1)	Est. No. of Units (Task 2)	Total Cost (Task 2)	Est. No. of Units (Task 3)	Total Cost (Task 3)	Est. No. of Units (Task 4)	Total Cost (Task 4)	Est. No. of Units (Task 5)	Total Cost (Task 5)	Est. No. of Units (Task 6)	Total Cost (Task 6)	Estimated No. of Units	Total Estimated Cost
A. Miscellaneous (Travel)															
1 Transportation	$0.485 /mile	96	$46.56	256	$124.16	0	$0.00	0	$0.00	128	$62.08	128	$62.08	608	$294.88
2. Tolls	$9.00 /trip	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
3. Van Rental	$400.00 /week	0	$0.00	17	$6,800.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	17	$6,800.00
4. Car Rental	$50.00 /day	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
5. Gas	$10.00 /day	0	$0.00	85	$850.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	85	$850.00
Subtotal (Travel)			$46.56		$7,774.16		$0.00		$0.00		$62.08		$62.08		$7,944.88
B. Miscellaneous (Expenses)															
1. Sample Shipping	$75.00 /peckage	0	$0.00	15	$1,125.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	15	$1,125.00
2 Express Mail	$15.00 /package	2	$30.00	4	$60.00	0	$0.00	0	$0.00	0	$0.00	4	$60.00	10	$150.00
	$50.00 /package	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
	$80.00 /package	0	$0.00	0	$0.00	3	$240.00	3	$240.00	0	$0.00	0	$0.00	6	$480.00
3. Photographs/Slides	$200.00 Lump Sum	0	$0.00	1	$200.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	1	$200.00
4. Printing	$50.00 /report	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
5 Equipment	$16.62 /person day	0	$0.00	90	$1,495.80	0	$0.00	0	$0.00	10	$166.20	0	$0.00	100	$1,662.00
Subtotal (Misc. Expenses)			$30.00		$2,880.80		$240.00		$240.00		$166.20		$60.00		$3,617.00
TOTAL			$76.56		$10,654.96		$240.00								$11,561.88

* See Schedule 2.10(b) for rates.

SCHEDULE 2.11 (d)1

EQUIPMENT PURCHASED UNDER THE CONTRACT
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

ITEM	ESTIMATED PURCHASE PRICE	O&M RATE ($/per month)	TERM OF USAGE (MONTHS)	ESTIMATED USAGE COST (COL. 2 + [3X4])
			TOTAL	$0.00

SCHEDULE 2.11 (d)4

EXPENDABLE SUPPLIES
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

ITEM	ESTIMATED QUANTITY	UNITS	UNIT COST	TOTAL BUDGETED COST (COL. 2 X 3)
Polyethylene tubing	4200	feet	$0.25	$1,050.00
Disposable bailers	0.0	case of 24	$200.00	$0.00
			TOTAL	$1,050

SCHEDULE 2.11 (d)5

CONSUMABLE SUPPLIES

Jimmy's Dry Cleaner

Work Assignment Number: D004446-4

ITEM	ESTIMATED QUANTITY	Units	UNIT COST	TOTAL BUDGETED COST (COL. 2 X 3)
Miscellaneous Supplies	6		$100.00	$600.00
			TOTAL	$600.00

Schedule 2.11 (e)
Cost Plus Fixed-Fee Subcontracts
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE
SeaBreeze Technologies, LLC	Peer Review of Selected Technical Documents	$15,215.06

A. Direct Salary Costs

Professional Responsibility Level	Labor Classification	Average Reimbursement Rate ($/Hr.)	Hours	Cost
Principal	IX	60.97	100	$6,097.00

Total Direct Salary Cost	**$6,097.00**
B. Indirect Salary Costs - 117% of Direct Salary Cost	**$7,133.49**
C. Maximum Reimbursement Rates for Direct Non-Salary Costs	**$0.00**
D. Fixed Fee (15% of Direct and Indirect Salary Costs)	**$1,984.57**

SCHEDULE 2.11 (f) 1
UNIT PRICE SUBCONTRACTS
SUMMARY
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
Mitkem Corporation	**Sample Analysis**	**$24,355**	**$1,218**

Item	Method	Maximum Reimbursement Rate	Estimated Units	Total Estimated Cost
Groundwater (Pre-Design)				
VOCs (1-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$92.50 per sample	66	$6,105.00
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	20	$1,480.00
Target Analyte List metals	EPA SOW ILM04.0 (6/00 ASP)	$68.00 per sample	20	$1,360.00
Hexavalent Chromium	218.5	$30.00 per sample	20	$600.00
Chloride	Method 9253	$15.00 per sample	20	$300.00
Soil (Pre-Deisgn)				
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	20	$1,480.00
Grain Size	—	$90.00 per sample	22	$1,980.00
Groundwater (Pilot Study)				
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	44	$3,256.00
Target Analyte List metals	EPA SOW ILM04.0 (6/00 ASP)	$68.00 per sample	44	$2,992.00
Hexavalent Chromium	218.5	$30.00 per sample	44	$1,320.00
Chloride		$15.00 per sample	44	$660.00
Soil (Pilot Study)				
TAL Metals (4-week turnaround time)	EPA SOW ILM04.0 (6/00 ASP)	$68.00 per sample	3	$204.00
Hexavalent Chromium	218.5	$30.00 per sample	3	$90.00
QA/QC Samples				
Groundwater				
Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank				
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	16	$1,184.00
Target Analyte List metals	EPA SOW ILM04.0 (6/00 ASP)	$68.00 per sample	6	$408.00
Hexavalent Chromium	218.5	$30.00 per sample	6	$180.00
Chloride		$15.00 per sample	6	$90.00
Soil				
Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank				
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	3	$222.00
Trip Blank				
VOCs (4-week turnaround time)	EPA SOW OLM04.2 (6/00 ASP)	$74.00 per sample	6	$444.00

SUBTOTAL	**$24,355.00**
SUBCONTRACT MANAGEMENT FEE	**$1,218**
TOTAL	**$25,572.75**

SCHEDULE 2.11 (f) 2
UNIT PRICE SUBCONTRACTS
SUMMARY
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR
Delta Well and Pump Company, Inc.

SERVICES TO BE PERFORMED
Drilling, Well Installation, Temporary Well Sampling and Gamma Logging

SUBCONTRACT PRICE: $139,336

MANAGEMENT FEE: $6,967

Item				Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
1.	A.	MOBILIZATION/DEMOBILIZATION,	Lump Sum	$1,500.00	1	$1,500.00
	B.	CONSTRUCTION AND REMOVAL OF DECON PAD	Lump Sum	$900.00	1	$900.00
	C.	WELL/BORING SET-UP	Per Well/Boring	$250.00	34	$8,500.00
2	HOLLOW STEM AUGER DRILLING					
	(1)	0-50 FEET IN DEPTH				
	C.	4.25" ID HOLLOW STEM AUGERS	Lineal Foot	$19.00	1,388	$26,372.00
	(2)	50-100 FEET IN DEPTH				
	B.	4.25" ID HOLLOW STEM AUGERS	Lineal Foot	$19.00	770	$14,630.00
	(3)	100-200 FEET IN DEPTH				
	B.	4.25" ID HOLLOW STEM AUGERS	Lineal Foot	$26.00	220	$5,720.00
3.	BOREHOLE SAMPLING					
	A.	SPLIT SPOON SAMPLING				
	(1)	2-INCH OD	Per Sample	$40.00	45	$1,800.00
4.	BOREHOLE ABANDONMENT					
	B.	4 TO 8 INCH DIAMETER BOREHOLE	Per Foot	$10.00	1,320	$13,200.00
4	WELL SCREEN - SCHEDULE 40 PVC					
	A.	1" ID	Per Foot	$4.00	8	$32.00
	B	2" ID	Per Foot	$7.00	150	$1,050.00
5	WELL SCREEN - STAINLESS, SCHEDULE 5, TYPE 304					
	A	2"ID	Per Foot	$40.00	5	$200.00
6	WELL RISER - SCHEDULE 40 PVC					
	A	1" ID	Per Foot	$3.00	40	$120.00
	B.	2" ID	Per Foot	$6.00	980	$5,880.00
7	STAINLESS SCHEDULE 5 TYPE 304					
	A	2"ID	Per Foot	$30.00	0	$0.00
6	WELL SCREEN SANDPACK MATERIAL		Bag (94 lbs.)	$12.00	200	$2,400.00
7	BENTONITE					
	A.	PELLETS	5 Gallon Pail	$65.00	25	$1,625.00
	B.	POWDER	Bag (50 lbs.)	$30.00	120	$3,600.00
8	GROUT					
	B.	PORTLAND CEMENT TYPE-II	Bag (94 lbs.)	$18.00	230	$4,140.00
9	INSTALLATION OF PROTECTIVE CASINGS 4" FLUSH MOUNT WITH LOCKING COVER, DRAIN HOLE SET IN A 2'X2' CONCRETE PAD EXTENDING AT LEAST 6 INCHES BELOW GROUND SURFACE		Per Casing	$150.00	23	$3,450.00
	KEYED ALIKE LOCKS		Per Lock	$18.00	19	$342.00
10	CONTAINERIZATION OF DRILLING MATERIAL AND STAGING (ON PALLETS)					
	A.	PROVIDE CLEAN EMPTY DOT APPROVED 55 GALLON DRUMS WITH SEALS, BUNGS, AND LIDS	Per 55 Gallon Drum	$50.00	55	$2,750.00
	B	FILLING, MOVING, STAGING 55 GALLON DRUMS ON-SITE ON PALLETS	Per 55 Gallon Drum	$30.00	55	$1,650.00
	C	MOVE FILLED DRUMS TO SECONDARY LOCATION WITHIN 1 MILE OF DRILL SITE	Per 55 Gallon Drum	$35.00	55	$1,925.00
11	WELL DEVELOPMENT					
	B.	PUMP AND SURGE (submersible, centrifugal)	Per Hour	$200.00	154	$30,800.00
12	ON-SITE RESTORATION					
	A	TOPSOIL	Cubic Yard	$30.00	5	$150.00
	B	GRASS SEEDING	Square Yard	$15.00	5	$75.00
	C	ASPHALT PAVING	Bag (60 lbs.)	$25.00	33	$825.00
13	SPECIALTY ITEMS (Road and Hydrant Permits)		Per Permit	$200.00	1	$200.00
14	STANDBY TIME		Per Hour	$150.00	30	$4,500.00
15	GAMMA LOGGING (includes mobilization/demobilization of equipment)		Per Well	$250.00	4	$1,000.00
			SUBTOTAL			$139,336.00
			SUBCONTRACT MANAGEMENT FEE			$6,967
			TOTAL			$146,302.80

SCHEDULE 2.11 (f) 3
UNIT PRICE SUBCONTRACTS
SUMMARY
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
Jamaica Blueprint Company, Inc.	Printing	$13,087	$654

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
Chemical Oxidation			
Draft Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$105 per set	7 sets	$735
Drawing Sets, 10 drawings each	$14 per set	7 sets	$95
Draft Final Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$105 per set	7 sets	$735
Drawing Sets, 10 drawings each	$14 per set	7 sets	$95
Draft Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$85 per set	52 sets	$4,417
Drawing Sets, 10 drawings each	$9 per set	52 sets	$468
SVE Modifications			
Draft Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$105 per set	7 sets	$735
Drawing Sets, 10 drawings each	$14 per set	7 sets	$95
Draft Final Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$105 per set	7 sets	$735
Drawing Sets, 10 drawings each	$14 per set	7 sets	$95
Draft Plans and Specifications			
Specifications, 1,000 double-sided sheets each	$85 per set	52 sets	$4,417
Drawing Sets, 10 drawings each	$9 per set	52 sets	$468
	SUBTOTAL		**$13,087**
	SUBCONTRACT MANAGEMENT FEE		**$654**
	TOTAL		**$13,742**

SCHEDULE 2.11 (f)4
UNIT PRICE SUBCONTRACTS
SUMMARY
JIMMY'S DRY CLEANER SITE
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
Coastal Environmental Group, Inc.	Waste Disposal	$8,900	$445

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
Disposal of non-hazardous drill cuttings	$120 Per drum*	55 Drums	$6,600
Disposal characterization sampling and analysis	$575 Per sample	4 Samples	$2,300
	SUBTOTAL		$8,900
	SUBCONTRACT MANAGEMENT FEE		$445.00
	TOTAL		$9,345

*Cost assumes that all drums will be picked up at one time.

SCHEDULE 2.11 (f) 5
UNIT PRICE SUBCONTRACTS
SUMMARY
JIMMY'S DRY CLEANER SITE
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
NAEVA Geophysics Inc.	Utility Survey	$3,175	

Item	Maximum Reimbursement Rate	Estimated No. of Units	Total Estimated Costs
Labor (crew of two)	$225.00 /hr	8	$1,800
Travel	$210.00 /hr	3	$630
GPR	$175.00 /hr	2	$350
Report	$100.00 /hr	1	$100
Graphics	$100.00 /hr	2	$200
Expenses			$95
	Estimated Total		**$3,175**

SCHEDULE 2.11 (f6
UNIT PRICE SUBCONTRACTS
SUMMARY
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE	MANAGEMENT FEE
Contest Analytical Laboratories Inc.	Sample Analysis	$2,322	$116

Item	Method	Maximum Reimbursement Rate		Estimated Units	Total Estimated Cost
Soil Vapor/Ambient Air					
VOCs	USEPA Method TO-15	$225.00	per sample	10	$2,250.00
Teflon Tubing		$3.00	feet	24	$72.00

SUBTOTAL	$2,322.00
SUBCONTRACT MANAGEMENT FEE	$116
TOTAL	$2,438.10

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: All Tasks
Complete: 0.00%

SCHEDULE 2.11 (g)
MONTHLY COST CONTROL REPORT
SUMMARY

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$136,586	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$206,245	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$342,831	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$7,945	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$7,947	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$15,892	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$223,764	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$9,400	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$591,887	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$39,426	0.00
10. Total Price	0.00	0.00	0.00	0.00	0.00	0.00	$631,313	0.00

Project Manager (Engineer) _____ Date _____

Engineer: Dvirka & Bartilucci
Work Assignment Number: D004446-4
Project Name: Jimmy's Dry Cleaner

SCHEDULE 2.11(g) SUPPLEMENTAL
MONTHLY COST CONTROL REPORT
SUBCONTRACTS

Date Prepared:
Billing Period:
Invoice No.:

Subcontract Name	Subcontract Costs Claimed this Application Including Resubmittals	Subcontract Costs Approved for Payment on Previous Application	Total Subcontract Costs to Date (A plus B)	Subcontract Approved Budget	Management Fee Budget	Management Fee Paid	Total Costs to Date
1. Delta Well and Pump	$0	$0	$0	$139,336	$6,967	$0	$0
2. Mitkem Corporation (MBE)	$0	$0	$0	$24,355	$1,218	$0	$0
3. Jamaica Blueprint Co., Inc. (WBE)	$0	$0	$0	$13,087	$654	$0	$0
4. Coastal Environmental Group, Inc.	$0	$0	$0	$8,900	$445	$0	$0
5. YEC, Inc.	$0	$0	$0	$17,374	$0	$0	$0
6. SeaBreeze Technologies LLC	$0	$0	$0	$15,215	$0	$0	$0
7. NAEVA Geophysics, Inc.	$0	$0	$0	$3,175	$0	$0	$0
18. Contest Analytical Laboratories, Inc. (WBE)	$0	$0	$0	$2,322	$116	$0	$0
Total				$223,764	$9,400		

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: 1/ Work Plan Preparation
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$7,482	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$11,298	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$18,780	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$47	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$30	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$77	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$18,857	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$2,160	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$21,016	0.00

Project Manager (Engineer) _____ Date _____

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: 2/ Pre-Design Field Studies
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$49,871	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$75,305	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$125,176	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$7,774	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$7,211	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$14,985	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$195,462	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$8,746	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$344,368	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$14,395	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$358,763	0.00

Project Manager (Engineer) _____ Date _____

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: 3/ OU1 In-Situ Chemical Oxidation Plans and Specifications
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$34,732	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$52,446	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$87,178	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$240	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$240	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$21,759	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$327	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$109,504	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$10,025	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$119,529	0.00

Project Manager (Engineer) _____ Date _____

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: 4- OU1 SVE System Modification - Plans and Specifications
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$24,475	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$36,957	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$61,432	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$240	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$240	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$6,544	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$327.19	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$68,543	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$7,065	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$75,608	0.00

Project Manager (Engineer) _____ Date _____

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: Task 5 - Installation of Sub-Slab Depressurization Systems
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$12,054	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$18,202	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$30,256	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$62	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$166	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$228	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$30,484	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$3,479	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$33,964	0.00

Project Manager (Engineer) _____ Date _____

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4
Task No./Name: 6 - Pre-Award Services
Complete: 0.00%

SCHEDULE 2.11(g)

Date Prepared:
Billing Period:
Invoice No.:

MONTHLY COST CONTROL REPORT
SUMMARY OF FISCAL INFORMATION

Expenditure Category	A Costs Claimed This Period	B Paid To Date	C Total Disallowed To Date	D Total Costs Incurred To Date (A+B+B1)	E Estimated Costs To Completion	F Total Work Assignment Price (A+B+E)	G Approved Budget	H Estimated Under/(Over) (G-F)
1. Direct Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$7,972	0.00
2. Indirect	0.00	0.00	0.00	0.00	0.00	0.00	$12,038	0.00
3. Subtotal Direct Salary Costs and Indirect Costs	0.00	0.00	0.00	0.00	0.00	0.00	$20,010	0.00
4. Travel	0.00	0.00	0.00	0.00	0.00	0.00	$62	0.00
5. Other Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$60	0.00
6. Subtotal Direct Non-Salary Costs	0.00	0.00	0.00	0.00	0.00	0.00	$122	0.00
7. Subcontractors	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
7a. Subcontractor Mgmt. Fee	0.00	0.00	0.00	0.00	0.00	0.00	$0	0.00
8. Total Task Cost	0.00	0.00	0.00	0.00	0.00	0.00	$20,132	0.00
9. Fixed Fee	0.00	0.00	0.00	0.00	0.00	0.00	$2,301	0.00
10. Total Task Price	0.00	0.00	0.00	0.00	0.00	0.00	$22,433	0.00

Project Manager (Engineer) _____ Date _____

SCHEDULE 2.11 (h)

Project Name: Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

Date Prepared:
Billing Period
Invoice No.

Monthly Cost Control Report
Summary of Labor Hours
Expended to Date/Estimated To Completion

NSPE Labor Classification	IX EXP/EST	VIII EXP/EST	VII EXP/EST	VI EXP/EST	V EXP/EST	IV EXP/EST	III EXP/EST	I & II EXP/EST	ADMIN/ SUPPORT	TOTAL NUMBER OF DIRECT LABOR HOURS EXP/EST
Task 1	0/ 3	0/ 0	0/ 0	0/ 72	0/ 62	0/ 0	0/ 36	0/ 32	0/ 0	0/ 205
Task 2	0/ 8	0/ 0	0/ 0	0/ 118	0/ 232	0/ 160	0/ 902	0/ 112	0/ 0	0/ 1,532
Task 3	0/ 8	0/ 0	0/ 8	0/ 144	0/ 232	0/ 0	0/ 0	0/ 774	0/ 0	0/ 1,166
Task 4	0/ 8	0/ 0	0/ 8	0/ 44	0/ 164	0/ 0	0/ 0	0/ 646	0/ 0	0/ 870
Task 5	0/ 4	0/ 0	0/ 4	0/ 28	0/ 4	0/ 0	0/ 292	0/ 58	0/ 0	0/ 390
Task 6	0/ 6	0/ 0	0/ 12	0/ 56	0/ 52	0/ 0	0/ 0	0/ 88	0/ 0	0/ 214
Total Hours	0/ 37	0/ 0	0/ 32	0/ 462	0/ 746	0/ 160	0/ 1230	0/ 1710	0/ 0	0/ 4377

MBE/WBE
UTILIZATION PLAN
Jimmy's Dry Cleaner
Work Assignment Number: D004446-4

Areas to be Subcontracted	Subcontractor Name	MBE/WBE	Total Subcontract Value	% MBE/WBE Utilization
1. Mitkem	Laboratory Services	MBE	$24,355	3.9%
2. YEC, Inc.	Surveying	MBE	$17,374	2.8%
3. Jamaica Blueprint Co., Inc.	Reproduction Services	WBE	$13,087	2.1%
4. Delta Well and Pump (WBE)	Drilling Services	WBE	$139,336	22.1%
5. Contest Analytical Laboratories	Air Analysis	WBE	$2,322	0.4%
6. Coastal Environmental (WBE)	Waste Disposal	WBE	$8,900	1.4%
Total MBE Utilization	MBE Subcontract Value / Total Contract Value	=	$41,729 / $631,313	6.6%
Total WBE Utilization	WBE Subcontract Value / Total Contract Value	=	$163,645 / $631,313	25.9%