Work Plan for Soil Vapor and Indoor Air Sampling with Sub-Slab Depressurization System Interim Remedial Measure

at

I.D.A Cleaners
579 Kings Highway
Brooklyn New York

August 2020

Prepared for:

Mr. Salvatore Foresta
I.D.A. Cleaners
579 Kings Highway
Brooklyn, New York 11223

WALDEN ENVIRONMENTAL ENGINEERING, PLLC
Industry Leader in Environmental Engineering Consulting
PROACTIVE SOLUTIONS SINCE 1995

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

Professional Engineer Certification

I certify that I am a professional engineer licensed to practice in New York State in accordance with New York State Education Law, Article 145, Section 7200 et seq. I have completed accredited university courses and degrees in engineering and have sufficient training and experience in environmental engineering and remedial design; soil, soil vapor/air and groundwater contamination; and related fields that enable me to make sound professional judgments with regards to engineering design.

I further certify that this submittal, *Work Plan for Soil Vapor and Indoor Air Sampling with Sub Slab Depressurization System Interim Remedial Measure*, dated August 2020, was prepared under my direction.

8/21/2020

Joseph M. Heaney III, P.E.
Walden Environmental Engineering, PLLC

Date

1.0 Introduction

IDA Cleaners (the "owner"), located at 579 Kings Highway, Brooklyn, New York (the "Site"), is preparing to conduct sub-slab vapor, indoor air and ambient outside air sampling at the site in accordance with an Administrative Consent Order ("ACO") dated December 20, 2018 by the New York State Department of Environmental Conservation ("NYSDEC" or "Department"). The ACO was agreed to by the site owners and the Department, although the site has not been listed as an Inactive Hazardous Waste Site or a Brownfield Cleanup Program Site. The AOC requires the following:

1. The collection of soil vapor intrusion (SVI) samples in the building and from the adjacent properties;
2. The collection of an indoor air sample(s) from the second floor at the Site;
3. Provide a contingency for additional sampling and/or mitigation based on soil vapor intrusion sampling activities;
4. Develop and implement an Interim Remedial Measure (IRM) consisting of a Sub Slab Depressurization System (SSDS); and
5. SVI sampling at the Site and adjacent buildings must be conducted prior to the startup of the SSDS.

The proposed work will be undertaken by Walden Environmental Engineering, PLLC ("Walden"), a Professional Engineering firm authorized to do business in New York State, in conjunction with MC Environmental, LLC ("MCE").The proposed work includes sampling to support the design of a Sub Slab Depressurization System (SSDS), and engineering design followed by installing, testing and operating the system. The SSDS is intended to mitigate volatile organic compounds ("VOCs") in soil vapor beneath the site and to prevent such VOCs from migrating into the IDA Cleaners building and into buildings immediately adjacent to the site. The scope of work described in this work plan is limited to the actions requested by the Department at the December 20, 2018 meeting at DEC Region 2 and, as agreed at this meeting, is not to be construed as a full-scale soil vapor intrusion study and remediation.

2.0 Sampling in Support of Design

Indoor Air, Outside Ambient Air and Sub-slab Vapor samples will be collected as listed in Table 1 and detailed below.

Table 1 - Sampling Locations

Sample Type	Location	Sample Quantity
Ambient Air	Outside Rear 579 Kings Hwy.	1
Indoor Air	579 Kings Hwy. 2nd Floor (residential unit above dry-cleaning space)	1
	575 Kings Hwy. basement	1
	581 Kings Hwy. basement	1
Sub-Slab Vapor	575 Kings Hwy.	1
	581 Kings Hwy.	1
	579 Kings Hwy.	2
	Total Samples	**8**

At this time, no indoor air sampling is proposed in the active dry-cleaning space on the first floor of the site. Note that the sampling planned in the adjacent buildings is subject to obtaining access from the respective property owners.

2.1 Soil Vapor Intrusion Sampling

The SVI sampling will be conducted in accordance with the 2006 *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* and subsequent updates issued by the New York State Department of Health (NYSDOH). As stated in Table 1, three (3) indoor air samples will be collected: one (1) from the basements of each adjacent building, and one (1) from the 579 Kings Highway 2nd floor residential unit above the dry cleaners. One (1) outdoor air sample will be collected from the small backyard of 579 Kings Highway. Four (4) sub slab soil vapor samples will be collected: two (2) from beneath 579 Kings Highway, and one (1) from each of the two adjoining basements. The sampling locations and procedures are described in the following sections.

2.1.1 Additional Soil Vapor Sampling Point Installations

There are currently two sub-slab vapor sampling points in the basement of 579 Kings Highway (IDA Cleaners), which were installed during previous investigation work at the Subject Property. Two (2) additional sampling points shall be installed off-site, one (1) in each adjacent property's basement (575 and 581 Kings Highway), provided that the adjacent property owners grant permission for such work. The on-site (existing) and off-site (proposed) sub-slab sampling point locations are shown on Figure 1. Neither Walden nor MCE has not obtained access or inspected

the basements of the adjacent properties as of the date of this Work Plan. The Client will make all reasonable efforts to obtain access to the off-site basements. A template letter to request access to the adjacent properties is provided in Appendix A. If the owners of the two adjacent properties are unwilling or unable to provide access, the Department will be notified and alternatives discussed, including moving the proposed soil vapor sampling points into the 579 Kings Highway basement close to the walls of the adjacent 575 and 581 Kings Highway basements.

Once access is granted, the basements of the adjacent properties will be inspected to evaluate the condition of the floor slabs (likely made of concrete) to check for cracks, gaps and openings that could affect the proposed sub-slab depressurization. Prior to installing the sub-slab vapor sampling points, a private utility survey will be completed to clear the drilling locations. Alternatively, the sampling points will be hand-dug to avoid utilities under uncertain conditions.

E Phase 2 (the contractor retained for the installation) will use a portable power drill to install the soil vapor probes no more than 6" below the basement floor slab of the adjacent buildings. The sub-slab vapor points will be sealed into the concrete floor slab to exclude ambient air. The seals of the monitoring points will be confirmed using helium tracer gas. A diagram of the proposed vapor sampling probes is shown on Figure 1. Installation of permanent monitoring points is proposed to facilitate any future re-sampling, subject to approval by the respective property owners.

2.1.2 Sub-slab Soil Vapor, Indoor Air and Outdoor Air Sampling Procedures

The SVI sampling is anticipated to take place in the summer of 2020. Sub-slab soil vapor samples will be collected from the on-site and off-site sampling points through the concrete basement floors. The indoor and outdoor air samples will be collected from 3 to 4 feet above the floor surface to represent the breathing zone. All samples will be collected concurrently in accordance with the NYSDOH Soil Vapor Intrusion Guidance (2006).

Prior to sampling, an indoor building inventory of potential sources of volatile organic compounds (VOCs, such as paint, solvents and cleaning products) will be conducted within 579, 575, and 581 Kings Highway. The inventory will follow the questionnaire provided in NYSDOH SVI Guidance and will inspect the condition of the basement and living areas if applicable. A copy of the NYSDOH questionnaire is included in Appendix B. The NYSDOH *New Ambient Air Guideline for Tetrachloroethene Announcement* (September 2013) is included in Appendix C; these substances will be considered while completing the questionnaire in Appendix B. In addition, the basement air quality of each space will be screened with a PID to determine baseline readings prior to sampling. Following the screening, Summa canister sampling will be conducted as described below.

All of the SVI samples will be collected concurrently using 6-liter Summa canisters equipped with 24-hour regulators. Prior to and immediately after sampling at each point, a pressure gauge will be used to check each Summa® canister for vacuum, and the pressure will be recorded. In the case of sub-slab vapor sampling, the ground surface will be sealed in advance to prevent ambient air infiltration during purging and sample collection, and tracer gas such as helium, will

be used to test the seal. A regulator will be used to keep flow rates during purging and sampling below 0.2 liters per minute to minimize outdoor air infiltration during the 24-hour sampling period.

The volume of air in each of the vapor/air sampling points (volume of sampling probe and/or tube depending on sample being secured) will be calculated, and a minimum of one to three volumes will be purged at a flow rate of 0.2 liters (or 200 mls) per minute immediately prior to sample collection. The soil gas/air samples will then be collected by opening the valve of the Summa® canister to draw air through the regulator to collect the sample at a rate of 0.2 liters per minute for 24 hours as specified above.

After the sampling is completed, the Summa® canister valve will be closed, the pressure gauge will again be read, and the vacuum will be recorded. The Summa canisters will be analyzed by York Laboratories, a New York ELAP-certified laboratory in Queens, NY. Samples will be picked up by courier hand delivered to the lab for VOC analysis by USEPA Method TO-15.

3.0 Sub-Slab Depressurization IRM

Once the SVI sampling is completed to determine the existing sub-slab vapor and indoor air concentrations of VOCs, the Owner will move forward with installing an Interim Remedial Measure (IRM) at the site consisting of a sub-slab depressurization system (SSDS) system. The proposed SSDS system components and schematic design are provided in Figure 1. The SSDS will be composed of sub-slab perforated piping installed within pits, basement header piping, a motor-driven vacuum blower and an exhaust stack extending from the basement to a point above the roof. Note that these sampling points will be converted to vacuum monitoring points that will be used to confirm that the sub slab has been successfully depressurized by the future SSDS. Details of the sub-slab depressurization points are also provided in Figure 1.

The SSDS installation at 579 Kings Highway will proceed according to the following tasks.

1. Inspect the basement floor and delineate areas that must be repaired or sealed. Floor cracks, utility penetrations, etc. will be sealed with fresh concrete or enclosed in an airtight barrier to prevent basement air from leaking into the system. This sealing work will only be performed in the IDA Cleaners space.

2. Measure the basement and other areas of the building where the system will be installed, determine piping footage, fittings, support brackets, etc. as required for the installation.

3. Two (2) holes at least 6-inches in diameter will be installed in the basement slab to a depth of at least one foot below slab level. The sidewalls will be dug out as much as possible to create pits for the SSDS. The bottom of the pits will be lined with blue stone. Subsequently, 3-inch diameter slotted PVC piping will be placed on top of the stone. The slotted interval will be coupled with solid PVC at slab level. The void space will be filled with coarse sand before the slab is restored around the PVC pipe with new concrete.

4. Install indoor PVC risers from the slab to header pipes along the wall or ceiling. The piping to the header from each riser should be approximately the same length to achieve even flow from each riser.

5. Install 3-inch PVC riser pipe along the outside wall at the rear of the building, attach to wall with pipe brackets and terminate a minimum of three feet above the roof line. An electric vacuum blower with the appropriate adapter will be installed on the 3-inch PVC riser pipe leading from the basement SSDS header to the roof. The pressurized side of the SSDS header will have an air sampling port for field PID measurements and laboratory sample collection. The blower will be connected to electrical power in the IDA Cleaners basement and equipped with on-off switching, failure alarm and such other equipment required by the manufacturer. The alarm will include visual (light) and audible warnings using an alarm indicator device installed in the IDA Cleaners store. Appropriate gauges will be installed with the system to measure vacuum pressure and flow.

6. The PVC riser will terminate above the roof and will adhere to NYSDOH guidance and New York City Department of Building (NYCDOB) codes. As such, the point of exhaust shall be at least 10' above ground level, at least 24" above the roof level, at least 10' from any adjoining buildings, at least 10' away from any adjoining buildings, and at least 25' from any HVAC intakes.

7. At the time of the SSDS start up, samples will be collected from the effluent of the system through a sampling port. A total of three (3) effluent samples will be collected during the startup process. These samples will be collected one hour after start up, one day (24 hours) after startup, and one week after start up. The samples will be collected in summa canisters utilizing the same method outlined above.

General SSDS material specifications are included on Figure 1. The detailed contractor scope of services is included in Appendix D. The IRM will be initiated after receiving NYSDEC approval of this work plan. Walden will prepare P.E.-stamped as-built SSDS drawings to be submitted with the Construction Completion Report (CCR) after the SSDS is completed and operational.

4.0 Field and General Project Oversight

E Phase 2 will provide utility mark out services, drilling, vapor probe installation and SSDS installation in accordance with this workplan. An itemized list of items in E Phase 2's scope is provided in Appendix D. A New York State certified laboratory (York Labs) will analyze indoor air, ambient air and sub-slab vapor samples for volatile organic compounds collected in Summa canisters by USEPA method TO-15. The Quality Assurance Program Plan (QAPP) is provided in Appendix E.

Walden and MCE will provide field oversight and sampling services in accordance with applicable sections of NYSDEC DER-10 Section 3.6 and NYSDOH Soil Vapor Intrusion Guidance (2006). A volatile organic vapor photoionization detector (PID) will be used to test the sub-slab headspace during the field work. A Community Air Monitoring Program (CAMP) as set forth in DER-10 Appendix 1A will be implemented during the performance of intrusive work, which is anticipated to be completed within one (1) day. Additionally, a special requirements Community Air Monitoring Program (CAMP) will be adhered to. It is anticipated that one CAMP station consisting of a particulate monitor (Dust Trak DRX Aerosol Monitor 8533 or equivalent) and one PID (Mini Rae 3000 or equivalent) will be stationed immediately outside of the work area within the basement in the direction of the closest building occupant. Background readings will be collected each day prior to and for the duration of intrusive work. At the end of each work day, readings will be collected at least fifteen minutes after work has concluded. All collected monitoring data will be provided to the NYSDEC and NYSDOH for review. Any exposed soil will be covered with plastic sheeting overnight, as needed. Outdoor air monitoring is not anticipated to be performed with the exception of collecting background readings prior to the start of work. No monitoring is proposed within adjacent buildings as monitoring will take place in the direct vicinity of the intrusive work. However, changes to the CAMP monitoring locations may be made based on monitoring data. If exceedances are noted, the need to place CAMP monitors in adjacent occupied structures may be evaluated. All work will be conducted in accordance with the attached Health and Safety Plan in Appendix F. A copy of the generic and special requirements CAMP is provided as Appendix G. Furthermore, all aspects of the SSDS installation work shall be overseen by Walden.

5.0 Construction Completion Report

Following the completion of the sampling activities and the installation of the SSDS, a Construction Completion Report (CCR) will be prepared in accordance with DER-10 Section 5.8. The CCR will summarize the IRM and will include the following components:

1. A narrative covering the field oversight, air and soil vapor sampling, vapor sampling point locations and observations of unanticipated conditions. If any changes are made to the Work Plan during the field work, they will be outlined in the CCR.
2. All CAMP data will be included in the CCR.
3. Supporting data tables and figures to indicate laboratory results and sampling locations. The figures will include a site plan with relevant features such as soil vapor monitoring points, SSDS details and the building layout, pertinent features and dimensions.
4. Findings of the SSDS start up test which will include measurements of residual vacuum in the soil vapor monitoring points onsite and in the adjacent building.
5. A Site Management Plan that includes recommendations for SSDS operation and monitoring including an SSDS Operation and Maintenance (O&M) manual and procedures to remotely signal whether the system is operating properly
6. A compilation of the available reports and background information on the site, most of which was previously provided by the Department.
7. Submission of electronic data deliverables ("EDDs").
8. As-built drawings of the SSDS signed and stamped by the certifying P.E.
9. The CCR will be prepared, stamped, certified and signed by a New York State licensed P.E. in accordance with article 145 of the Education Law.

6.0 Schedule

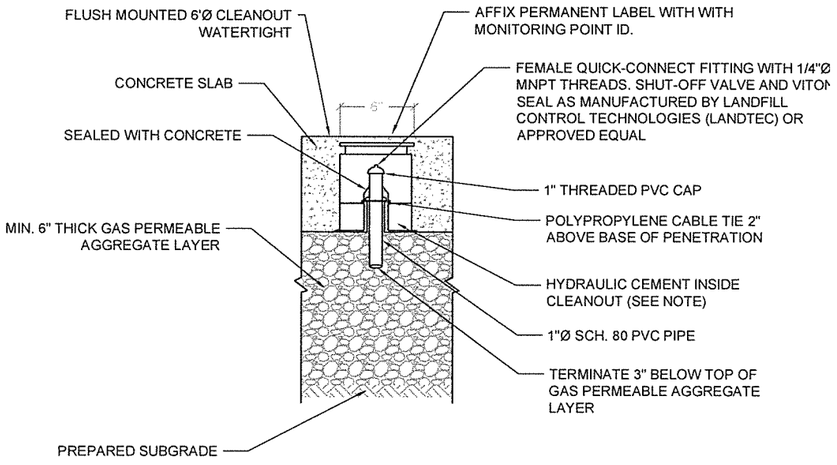
NYSDEC and NYSDOH will be notified of mobilization to the field at least ten (10) days in advance performing the investigation. Further, daily reports will be submitted to the agencies by e-mail for each day of investigatory work performed.

The results of the indoor air, ambient air and soil vapor laboratory analyses (Method TO-15) would be received within approximately three weeks of sample collection.

The SSDS installation will proceed after the laboratory data have been reviewed and any proposed changes to the SSDS will be presented to the Department. The NYSDEC will be notified at least ten (10) days prior to the start of the SSDS installation. Further, daily reports will be submitted by e-mail throughout the installation of the SSDS. Upon completion of the installation, Walden will submit the SSDS engineering report to NYSDEC with P.E.-stamped as-built drawings per NYSDEC requirements.

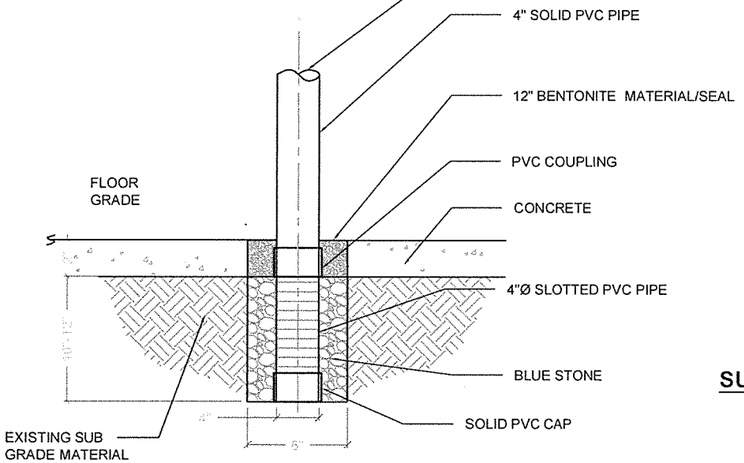
Figure 1

Sub-Slab Depressurization System Location and Details



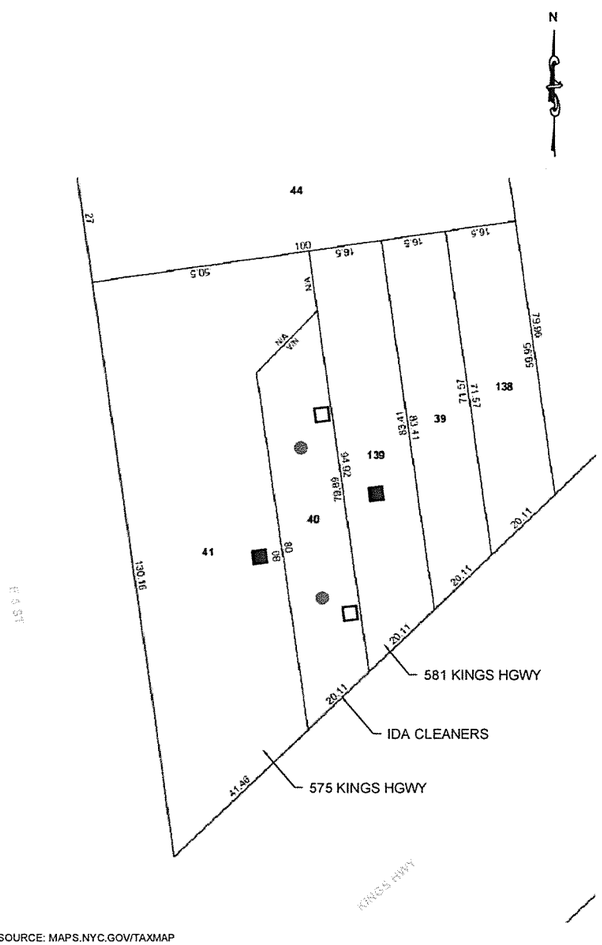
TYPICAL MONITORING POINT

N.T.S.



TYPICAL VERTICAL WELL POINT

N.T.S.



SOURCE: MAPS.NYC.GOV/TAXMAP

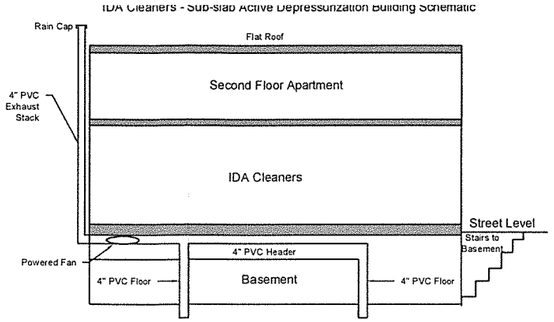
SUB-SLAB DEPRESSURIZATION SYSTEM LOCATION AND DETAILS

SCALE: 1"=30'-0"

0 15 30 60 90

SCALE: 1"=30'

BLOCK: 6662
LOT: 40
ZONING: R6A



BUILDING SCHEMATIC

N.T.S.

NOTES:

1. THE PRESSURE SIDE OF THE SSDS HEADER WILL HAVE AN AIR SAMPLING PORT.
2. THE BLOWER WILL BE CONNECTED TO ELECTRICAL POWER IN THE IDA CLEANERS BASEMENT AND BE EQUIPPED WITH ON-OFF SWITCH FAILURE ALARM, ETC.

LEGEND

- PROPOSED WELL POINT LOCATION
- PROPOSED SUB-SLAB MONITORING POINT
- EXISTING SUB-SLAB MONITORING POINT

STATE OF NEW YORK
JOSEPH MICHAEL HANLEY III
LICENSED PROFESSIONAL ENGINEER
068022-1

Walden Environmental Engineering

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16 SPRING STREET
OYSTER BAY, NEW YORK 11771
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WWW.WALDENENVIRONMENTALENGINEERING.COM

FOR: 579 Kings Highway, Brooklyn, NY 11223		DRAWING TITLE: SUB-SLAB DEPRESSURIZATION SYSTEM LOCATION AND DETAILS		DRAWING NO.: 1	ISSUED
DESIGNED BY: MJM/EMJ	DRAWN BY: LS	JOB NO:P-1901-Kings HWY	DATE: 5/28/19	11x17	SHEET NO: 1 OF 1
APPROVED BY: JMH	SCALE: AS NOTED	CAD FILE NAME: Z:\Jobs\1901\579 KINGS HGWY\P-1901-579 KINGS HGWY.dwg			REVISION N 0

Appendix A

Template Access Letter

WALDEN ENVIRONMENTAL ENGINEERING

Sent by Certified Mail # _____

(Date)

Property Owner
575 Kings Highway
Brooklyn, New York 11223

Re: Permission for Property Access
575 Kings Highway
Brooklyn, New York

To Whom it May Concern:

Walden Environmental Engineering, PLLC ("Walden") and MC Environmental ("MCE") are the environmental consulting engineer for IDA Cleaners, Inc, the owner of property located at 575 Kings Highway, New York (the "Site") and has been engaged to investigate sub slab soil vapor conditions.

The investigation of the Site is being overseen by the New York State Department of Environmental Conservation ("NYSDEC") and the New York State Department of Health (NYSDOH). The Site owner is working with the NYSDEC and the NYSDOH to investigate and to make necessary improvements the Site with NYDEC and NYSDOH approval.

Access to your property, located at 575 Kings Highway, Brooklyn, New York is requested to perform indoor air and sub-slab soil vapor sampling. The sampling results will be used to support an engineering design for the IDA Cleaners Site. All of the work will be performed in accordance with a work plan reviewed and approved by both the NYSDEC and NYSDOH. All sampling will be coordinated by Walden and/or MCE, which will oversee the work of qualified subcontractors who will be retained to conduct the actual drilling and sampling efforts.

The work to be conducted at 575 Kings Highway, Brooklyn, New York is detailed below with a tentative sequence of events. Please note your presence is required during the times that Walden, MCE, and the subcontractors are to be on your property. Refer to the attached photographs for additional information.

First Day (Walden/MCE, Utility Mark-out Subcontractor and Drilling Subcontractor)

- Walden/MCE will inspect the basement/lowest level of your property to inventory chemicals stored on-site (such as cleaning products, paints, etc.) and select an appropriate location for sampling. The sampling location will be selected in an area with an unfinished floor if possible.
- A utility mark-out contractor will perform a Ground Penetrating Radar (GPR) survey to mark out the proposed sampling location and to ensure that no sub-surface structures and/or utility lines will be impacted by the investigation.
- After an appropriate sampling location has been selected based on Walden/MCE's inspection and the GPR survey (and approved by the property owner), the drilling contractor will drill through the basement/lowest level floor slab and install a temporary sub-slab sampling port below the concrete slab. (Note that the floor surface will be restored with cement immediately after the sample is collected.) A small diameter hole (approximately one inch) will be drilled through the concrete floor slab and into sub-slab material approximately two (2) inches below the bottom of the floor slab. A temporary probe constructed from inert tubing (e.g. polyethylene, stainless steel, nylon, Teflon®, etc.) will be installed and sealed to the floor. Testing will be performed to ensure that the seal is tight. The temporary probe will remain until vapor sampling results are received in case a confirmation sample has to be collected. Once the temporary probes are no longer needed, they will be removed and the openings in basement floor restored with fresh concrete.
- Walden/MCE will set up air sampling canisters to collect one sub-slab vapor sample and one indoor air sample from the basement/lowest level of the property.
- The sub-slab vapor sample will be collected from the temporary sub-slab sampling port installed below the concrete slab.
- The indoor air sample will be collected concurrently with the sub-slab vapor sample, at approximately the same location as the sub-slab vapor sample.
- A sampling canister will be placed adjacent to the sub-slab sampling port and the indoor air sampling location. The sub-slab and indoor air samples will be collected using laboratory-provided sampling canisters over a 24-hour period.
- The sampling probe, canisters and all sampling equipment must not be disturbed during the sampling period.
- The total anticipated time within your residence for this portion of the work would be approximately two (2) to three (3) hours.

Second Day (Walden/MCE)

- Walden/MCE will return at the end of the 24-hour sampling period to remove the sampling canisters. The tubing used to connect the sub-slab vapor sampling canister to the probe will be removed. The sub-slab vapor probe will then be removed and the floor surface will be restored in kind.
- The total anticipated time within your residence for this portion of the work would be approximately 30 minutes.

The Site owner, Walden and MCE will comply with the following conditions of access to the 575 Kings Highway, Brooklyn, New York property:

- The property owner will be notified at least 10 days prior to the scheduled sampling date. Please indicate below any dates when you are unavailable to provide Walden/MCE entry to the property, so the sampling can be scheduled accordingly.
- The procedures set forth in the sampling work plan approved by the NYSDEC and NYSDOH will be followed. A copy of this work plan will be made available to you upon request. Walden/MCE will strive to schedule the work and subcontractors so that access to the property is required only two (2) times: once to install the sampling location, and set the canister(s) for sampling; and once after the canisters are set (approximately 24 hours after the sampling begins) to retrieve them. Walden/MCE will attempt to accommodate your scheduling preferences to the extent feasible.
- The work will be performed in a clean and orderly fashion.

Please sign below to indicate your permission (or denial of permission) to allow the Site Owner, Walden and MCE to access the 575 Kings Highway, Brooklyn, New York property for the sampling described herein, and return to Walden/MCE by mail (stamped envelope enclosed), fax to 516-624-3219, or email to ejohnston@walden-associates.com. Kindly respond to this letter with your permission or denial of permission within five (5) business days of receipt so that sampling may begin.

If you have any questions, please contact Angela Martin at the New York State Department of Health at 518-402-7860, Mandy Yau at the New York State Department of Environmental Conservation at 518-402-9621, Michael McEachern at MCE at (516) 242-4981, or Erica Johnston at Walden Environmental Engineering at (516) 624-7200.

Thank you for your courtesy and cooperation.

Very truly yours,
Walden Environmental Engineering, PLLC.

Erica Johnston
Project Scientist

and
MC Environmental, LLC

Michael McEachern, P.G.
Principal

Access authorized by owner of property located at 575 Kings Highway, Brooklyn, New York:

_____ _____
Signature Date

_____
Print Name

-OR-

Access denied by owner of property located at 575 Kings Highway, Brooklyn, New York:

_____ _____
Signature Date

_____
Print Name

Please list any dates when access to your property is not available: _____

Appendix B

New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

_____

_____

_____

Airflow near source

_____

_____

_____

Outdoor air infiltration

_____

_____

_____

Infiltration into air ducts

_____

_____

_____

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	concrete	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

_____

_____

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other_____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

_____

_____

_____

_____

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	_____
1st Floor	_____
2nd Floor	_____
3rd Floor	_____
4th Floor	_____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / N

b. Does the garage have a separate heating unit? Y / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA Please specify_____

d. Has the building ever had a fire? Y / N When?_____

e. Is a kerosene or unvented gas space heater present? Y / N Where? _____

f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____

g. Is there smoking in the building? Y / N How frequently? _____

h. Have cleaning products been used recently? Y / N When & Type? _____

i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented?_____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented?_____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type?_____

Are there odors in the building? Y / N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	Public Water	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	Public Sewer	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

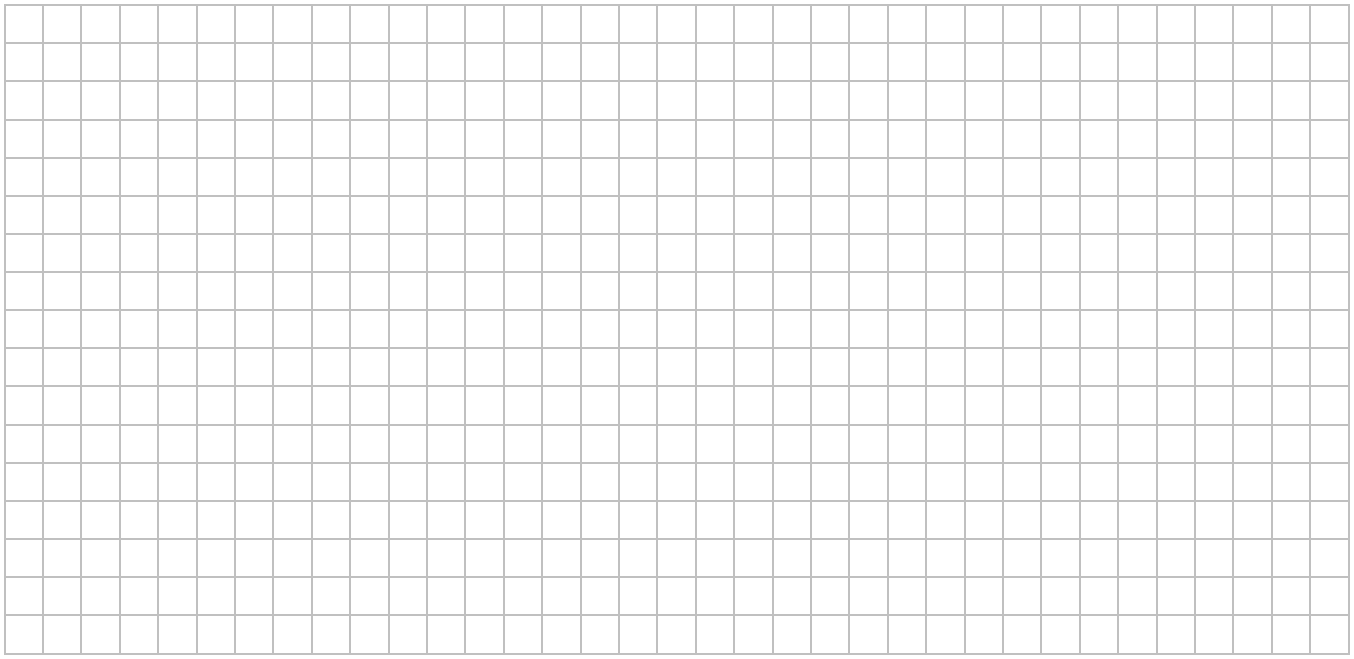
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

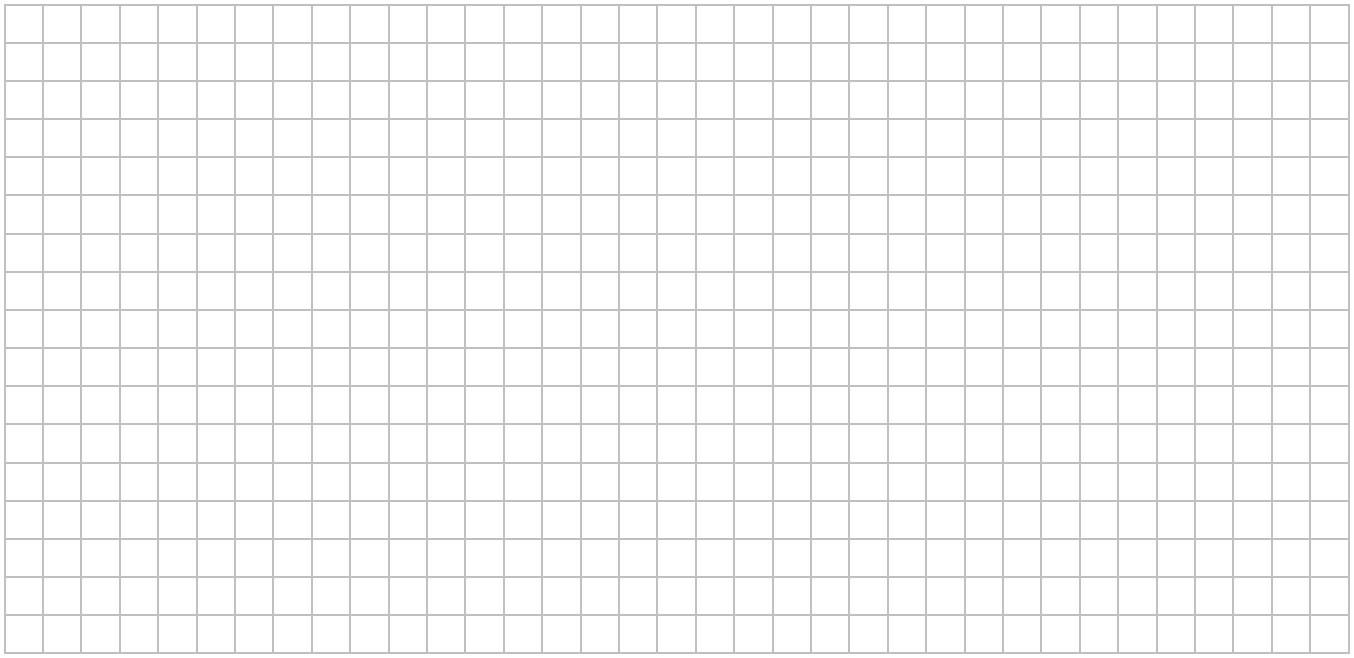
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



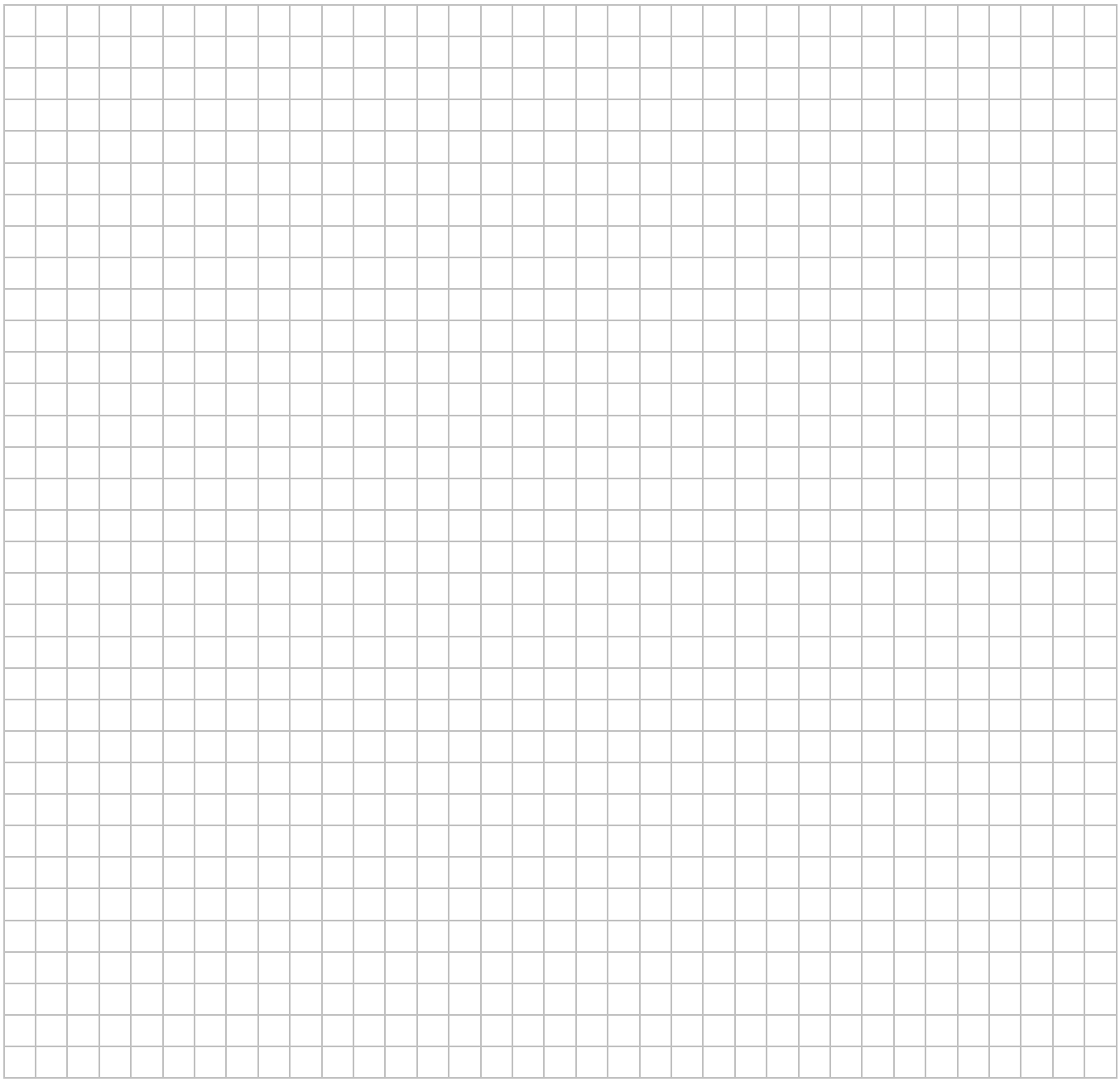
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Appendix C

New York State Department of Health (NYSDOH) New Ambient Air Guideline for Tetrachloroethene Announcement-September 2013

New York State Department of Health September 2013: New Ambient Air Guideline for Tetrachloroethene Announcement

NYSDOH has lowered their guideline for tetrachloroethene in ambient air from 100 micrograms per cubic meter (mcg/m3) to 30 mcg/m3 and their recommended immediate action level from 1000 mcg/m3 to 300 mcg/m3. The air guideline identified in Table 3.1 of the final guidance is no longer applicable. Products used at home or work can release VOCs into the air when used and stored.

Household Products	Possible VOC Ingredients
Fuel containers or devices using gasoline, kerosene, fuel oil and products with petroleum distillates: paint thinner, oil-based stains and paint, aerosol or liquid insect pest products, mineral spirits, furniture polishes	BTEX (benzene, toluene, ethylbenzene, xylene), hexane, cyclohexane, 1,2,4-trimethylbenzene
Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray	Acetone, ethyl alcohol, isopropyl alcohol, methacrylate's (methyl or ethyl), ethyl acetate
Dry cleaned clothes, spot removers, fabric/ leather cleaners	Tetrachloroethene (perchloroethene (PERC), trichloroethene (TCE))
Citrus (orange) oil or pine oil cleaners, solvents and some odor masking products	d-limonene (citrus odor), a-pinene (pine odor), isoprene
PVC cement and primer, various adhesives, contact cement, model cement	Tetrahydrofuran, cyclohexane, methyl ethyl ketone (MEK), toluene, acetone, hexane, 1,1,1-trichloroethane, methyl-iso-butyl ketone (MIBK)
Paint stripper, adhesive (glue) removers	Methylene chloride, toluene, older products may contain carbon tetrachloride
Degreasers, aerosol penetrating oils, brake cleaner, carburetor cleaner, commercial solvents, electronics cleaners, spray lubricants	Methylene chloride, PERC, TCE, toluene, xylenes, methyl ethyl ketone, 1,1,1-trichloroethane
Moth balls, moth flakes, deodorizers, air fresheners	1,4-dichlorobenzene, naphthalene
Refrigerant from air conditioners, freezers, refrigerators, dehumidifiers	Freons (trichlorofluoromethane, dichlorodifluoromethane)
Aerosol spray products for some paints, cosmetics, automotive products, leather treatments, pesticides	Heptane, butane, pentane
Upholstered furniture, carpets, plywood, pressed wood products	Formaldehyde

Appendix D

Detailed SSDS Scope of Services

E Phase 2 LLC - Site located at 579 Kings Highway (and adjacent properties), Brooklyn

Scope of Work

Install 2 soil vapor monitoring points through the basement slabs in two adjoining properties.

Install an active Sub Slab Depressurization System (SSDS) with two suction points and piping along ceiling to 3 feet above the roof line in the subject building.

Conduct a communication test of SSDS and Install alarm for SSDS

Repair approximately 30 feet of cracks in cement in basement floor.

Build cover for sewer pit located in basement.

Mobilization of 4-man crew to Brooklyn

Soil/gas implant 3/16" tubing on 6" stainless steel bayonet screen, finished with glass beads and bentonite seal. Includes permanent manhole cover.

Helium, Shroud and Helium detector 1 200.00 200.00T

Installation of an active SSDS with 3" schedule 40 PVC and two suction pits. Includes communication test

Blower Fan (GP-501) FAN DUCT DIAMETER 3”, 68-146 WATTS, 50 cfm

Installation of visual and audible alarm for SSDS

Technician - repair cracks in slab and install a cover over the sewer cleanout pit in basement

Estimated time to clear 30' of cracks and fill with hydraulic cement

Estimated time to construct a plywood hatch with gasket to seal floor over sewer cleanout – secure with concrete fasteners

Supplies for repairs (concrete, plywood, gasket and bolts)

Assumptions:
-Access to adjoining property will be coordinated by client.
-Assumes that all areas will be accessible, clear of obstructions prior to installation.
-Electricity for blower will be available at the location or will be provided by others.
Additional technician manpower will be $70 per man per hour, if site conditions prevent the work from being completed in a single day, plus an additional $200 (2 men) for mobilization per day.

Appendix E

Quality Assurance Project Plan

Quality Assurance Project PLAN

for

I.D.A. Cleaners
579 Kings Highway
Brooklyn, New York 11223

July 2020

Walden Environmental Engineering, PLLC
16 Spring Street
Oyster Bay, New York 11771
Phone: (516) 624-7200
Fax: (516) 624-3219
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Walden Associates

TABLE OF CONTENTS

1.0 Project Organization and Responsibilities

Walden Environmental Engineering, PLLC (Walden) maintains company policies and procedures to ensure that all sample collection and analyses meet a high degree of quality. These policies and procedures provide confidence that the resulting data provide an accurate representation of the matrix being sampled. Quality Assurance/Quality Control (QA/QC) starts with the design of the sampling program and ends with the summarized analytical data submitted in the final report. This Quality Assurance Project Plan (QAPP) describes these QA/QC policies and procedures.

The project Quality Assurance Officer (QAO) is responsible for ongoing surveillance of project activities, for ensuring conformance to this QAPP, and for evaluating the effectiveness of its requirements. The QAO has access to any personnel or subcontractors, as necessary, to resolve technical problems and take corrective action as appropriate and has the authority to recommend that work be stopped when there are factors present that may jeopardize quality. The QAO will be available to respond to immediate QA/QC problems.

The primary responsibilities of the QAO are as follows:

- Monitor the correction of QC problems and alert task leaders to where similar problems might occur.
- Develop and maintain project QA files for sampling, monitoring, and field QA records.
- Participate in QA audits.
- Recommend changes to the project manager to improve the effectiveness of the project in reaching its QA objectives for field sampling and monitoring activities.
- Review proposed additions and changes to this QAPP.

The project QA will be maintained under the direction of Mr. Michael McEachern of MC Environmental (MCE) (see attached resume), who will be assigned as the project's QAO, in accordance with this QAPP. Walden will provide appropriate oversite to ensure the requirements of this QAPP are met. QC for specific tasks will be the responsibility of MCE, Walden and their subcontractors, which shall be selected at the time the work is required under the direction of Mr. McEachern. Mr. Lawrence Zeman of Walden shall validate all laboratory data as outlined below.

2.0 Quality Assurance Project Plan Objectives

2.1 Overview

Overall project goals are defined through the development of Data Quality Objectives (DQOs), which are qualitative and quantitative statements that specify the quality of the data required to support decisions. Data quality is measured by how well the data meet the QA/QC goals of the project. In this plan, "Quality Assurance" and "Quality Control" are defined as follows:

- Quality Assurance - The total integrated program for assuring reliability of monitoring and measurement data.
- Quality Control - The routine application of procedures for obtaining prescribed standards of performance in the monitoring and measurement process.

As stated in the Guidance for Data Quality Objectives Process (EPA QA/G-4), DQOs are derived from the outputs of each step of the DQO process that:

- Classify the study objective;
- Define the most appropriate type of data to collect;
- Determine the most appropriate conditions from which to collect the data; and
- Specify acceptable levels of decision errors that will be used as the basis for establishing the quantity and quality of data needed to support the decision (USEPA, 1994).

A non-probabilistic (judgmental) sampling approach will be used to select the specific sampling locations for the areas of concern. A judgmental sampling design consists of directed samples at specific sampling locations to confirm the existence of contamination at these chosen locations based on visual or historical information (i.e., discoloration, staining, and deterioration).

Total study error is the combination of sampling and measurement error. Total study error is directly related to decision error. These decision errors can be controlled through the use of hypothesis testing. For this sampling, the null hypothesis (baseline condition) is that the parameter of interest exceeds the cleanup levels. This decision has the smallest degree of decision error. In addition, measurement error is reduced by analyzing individual samples using more precise laboratory and sampling methods. The soil, sub-slab vapor, and indoor/outdoor air sampling will be performed with dedicated equipment and following the appropriate standard operating procedures for sample handling.

2.2 QA/QC Requirements

QA elements to be evaluated include accuracy, precision, sensitivity, representativeness and completeness. Reporting of the data must be clear, concise and comprehensive. The data generated by the analytical laboratory for this project is required to be sensitive enough to achieve detection levels low enough to meet Contract Required Quantitation Limits (CRQLs) as specified in NYSDEC Analytical Services Protocol (NYSDEC ASP) for Superfund CLP and EPA SW-846 methods performed in accordance with NYSDEC ASP protocol. The analytical results meeting the CRQLs will provide data sensitive enough to meet the objectives of the work described in the *Work Plan for Soil Vapor and Indoor Air Sampling with Sub-Slab Depressurization System Interim Remedial Measure (May 2020).* The QC elements that are important to this project are blank contamination, instrument calibration, completeness of field data, sample-holding times, sample preservation and sample chain of custody.

2.3 Initial Instrument Calibration

Calibration curves will be developed for each of the compounds to be analyzed. Standard concentrations and a blank will be used to produce the initial curves. The development of calibration curves and initial calibration response factors must be consistent with method requirements presented in the most recent version of SW-846 and the NYSDEC's Analytical Services Protocol (ASP).

2.4 Continuing Instrument Calibration

The initial calibration curve will be verified every 12 hours by analyzing one calibration standard. The standard concentration will be the midpoint concentration of the initial calibration curve. The calibration check compound must come within 25% relative percent difference (RPD) of the average response factor obtained during initial calibration. If the RPD is greater than 25%, then corrective action must be taken as provided in the specific methodology.

2.5 Method Blanks, Field Blanks and Trip Blanks

Method blank or preparation blank is prepared from an analyze-free matrix, which includes the same reagents, internal standards and surrogate standards as the related samples. It is carried through the entire sample preparation and analytical procedure. A method blank analysis will be performed once for each 12-hour period during the analysis of samples for Volatile Organic Compounds (VOCs). The method blank will be used to demonstrate the level of laboratory background and reagent contamination that might result from the analytical process itself.

Field blanks and trip blanks will also be collected to ensure no contamination arises from sampling equipment or the transportation and handling methods.

2.6 Duplicates

Duplicate samples are two or more samples considered representative sub-samples of the same source. The samples are identically processed throughout the measurement system. For the SVI monitoring, laboratory duplicate analyses will consist of one (1) sub-slab vapor sample, one (1) indoor air sample, and one (1) outdoor air sample for every batch of field samples. For the pre-design soil investigation, one (1) duplicate sample will be collected per day of sampling. Duplicate samples will be analyzed as per appropriate methodology. Duplicate analyses for Target Compound List (TCL) compounds will be associated with matrix spike and matrix spike duplicate analyses. The results of the duplicate analyses will be used to assess the precision of the measurement systems.

2.7 Surrogate Spike Analysis

Surrogate standard determinations will be performed on all samples and blanks analyzed by the analytical laboratory. All samples and blanks will be spiked with the appropriate surrogate compounds (as indicated by the methodology) before purging or extraction in order to monitor preparation and analyses of samples. Surrogate spike recoveries shall fall within the advisory limits in accordance with the SW-846 protocols for samples falling within the quantitation limits without dilution.

2.8 Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank Analysis

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analyses will be performed to evaluate the matrix effect of the sample upon the analytical methodology along with the precision of the instrument by measuring recoveries. The MS/MSD samples will be analyzed for each group of samples of a similar matrix, at a rate of one for every batch of field samples. The Relative Percent Difference (RPD) will be calculated from the difference between the MS and MSD. Matrix spike blank (MSB) analysis will be performed to indicate the appropriateness of the spiking solution(s) used for the MS/MSD.

2.9 Accuracy

Accuracy is defined as the nearness of a result or the mean (x) of a set of results to the true value. Accuracy is assessed by means of reference samples and percent recoveries. Accuracy includes both precision and recovery, and is expressed as Percent Recovery (% REC). The MS sample is used to determine the percent recovery. The matrix spike % REC is calculated by the following equation:

$$\%REC = \frac{SSR - SR}{SA}$$

where:

SSR = measurement from spiked sample

SR = measurement from un-spiked sample

SA = actual data of spike added

2.10 Precision

Precision is defined as the measurement of agreement of a set of replicate results among themselves without assumption of any prior information as to the true result. Precision is assessed by means of duplicate/replicate sample analyses. Analytical precision is expressed in terms of Relative Percent Difference (RPD) which is calculated using the following equation:

$$RPD = \frac{D_1 - D_2}{(D_1 + D_2)/2}$$

where:
RPD = Relative Percent Difference
D_1 = larger sample value
D_2 = smaller sample value (duplicate)

2.11 Sensitivity

The sensitivity objectives for this plan require that data generated by the analytical laboratory achieve detection levels low enough to meet the CRQLs as specified by SW-846 methods. The Method Detection Limits (MDL) for target compounds and target analyses will be established by the analytical laboratory to be well below the remedial objectives and submit appropriate documentation to Walden as required by the QAO.

2.12 Representativeness

Representativeness is a measure of the relationship of an individual sample taken from a particular site to the remainder of the site and the relationship of a small aliquot of the sample (i.e., the one used in the actual analysis) to the sample remaining on-site. A blind duplicate is used to accomplish this task, as well as assessing the precision of the data. The RPD between the two samples should be less than 50%. The use of standardized techniques and statistical sampling methods influences the representativeness of an aliquot of sample to the sample at the site. The representativeness of samples is assured by adherence to sampling procedures presented in this document, therefore no specific representativeness samples are to be collected.

2.13 Completeness

Completeness is a measure of the quantity of data obtained from a measurement system as compared to the amount of data expected from the measurement system. Completeness is defined as the percentage of all results that are not affected by failing QC qualifiers and should be between 90% and 100% of all analyses performed. The objective of completeness in laboratory reporting is to provide a thorough data support package. The laboratory data package provides documentation of sample analysis and results in the form of summaries, QC data and raw analytical data. The laboratory will be required to submit

data packages that follow SW-846 reporting format, which, at a minimum, will include the following components:

1. All sample chain-of custody forms.
2. The case narrative(s) presenting a discussion of any problems and/or procedural changes required during analyses. Also presented in the case narrative are sample summary forms.
3. Documentation demonstrating the laboratory's ability to attain the contract specified detection limits for all target analyses in all required matrices.
4. Tabulated target compound results and tentatively identified compounds.
5. Surrogate spike analysis results (organics).
6. Matrix spike/matrix spike duplicate results.
7. QC checks sample and standard recovery results.
8. Blank method results.
9. Internal standard area and RT summary.

2.14 Comparability

Comparability is the degree to which analytical data generated from an individual laboratory can be compared with those from another laboratory, in terms of use of standardized industry methods and equivalent instrumentation techniques. No laboratory split samples will be taken for this project.

3.0 Calibration and Maintenance Procedures of Field Equipment

Walden follows manufacturer's recommendations and guidelines with regard to field instrument calibration procedures. The calibration of each instrument will be checked prior to each day's use. The date and time of the calibration check, serial number, model number and signature of the calibrating technician will be entered into the field logbook. If the instrument readings are incorrect, the instrument will be either recalibrated by the technician or returned to the Walden's office where it will be further evaluated and/or repaired. If field instruments require major overhauls, the instruments will be returned to the appropriate manufacturer.

Preventive maintenance of field equipment is performed routinely before each sampling event and more extensive maintenance is performed based on hours of use. The Walden equipment coordinator has overall responsibility for the preventive maintenance program. However, certain maintenance programs are overseen by the project manager. Routinely, manually operated sampling equipment is checked to ensure it operates properly and that excessive wear has not occurred. If necessary, equipment is taken out of service for repair or replacement.

4.0 Tracer Gas Monitoring for SVI Sampling

A tracer gas will be used as a quality assurance/quality control (QA/QC) measure to verify the integrity of the soil vapor probe seal. This measure will be used to determine that the soil vapor sample has not been diluted by ambient air. Plastic sheeting will be placed around the sampling probes and sealed around the edges to create an adequate surface seal to prevent outdoor air infiltration. Helium tracer gas will be introduced under the plastic sheeting through a small opening to enrich the atmosphere in the immediate vicinity of the sampling probes with the tracer gas. A portable helium monitoring device will be used to analyze a soil vapor sample for the helium tracer gas to confirm the integrity of the probe seals before vapor samples were collected in Summa® canisters. The helium detector will serve to purge the points of 1 to 3 volumes of air prior to sampling.

5.0 Sample Custody

5.1 Overview

The handling of samples in the field and in the laboratory will conform to the sample custody procedures presented in this section. Field custody procedures involve proper sample identification, chain-of-custody forms, packaging and shipping procedures. Laboratory custody begins with the receipt of samples by the laboratory and continues through sample storage, analysis, data reporting and data archiving. This section provides the procedures that will be followed during the course of the project to ensure proper sample custody.

5.2 Field Custody Procedures for Off-Site Laboratory

The following elements are important for maintaining the field custody of samples:

- Sample identification
- Sample labels
- Custody records
- Shipping records
- Packaging procedures

Sample labels will be attached to all sampling containers before field activities begin. Each label will contain an identifying number and each number will have a suffix that identifies the site and where the sample was collected. Approximate sampling locations will be marked on a map with a description of the sample location. The number, type of sample and sample identification will be entered into the field logbook. A chain-of-custody form will accompany the sampling containers from the laboratory into the field. Upon receipt of the samples and cooler, the sampler will sign and date the first "received" blank space. After each sample is collected and appropriately identified entries will be made on the chain-of-custody form that will include:

- Site name and address
- Samplers' names and signatures
- Names and signatures of persons involved in chain of possession
- Sample number
- Number of containers
- Sampling station identification
- Date and time of collection
- Type of sample and the analyses requested
- Preservatives used (if any)
- Pertinent field data (if any)

After sampling has been completed, the samplers will return/ship the samples to the laboratory. The sampler will sign and date the next "relinquished" blank space. One copy of the custody form will remain with the field personnel and the remaining copies will accompany the samples to the laboratory. The samples will be shipped to the laboratory within 24 hours of collection. Samples will be received by laboratory personnel, who will assume custody of the samples and sign and date the next "received" blank.

5.3 Laboratory Custody Procedures

Upon receipt by the analytical laboratory, samples will proceed through an orderly processing sequence specifically designed to ensure continuous integrity of both the sample and its documentation.

All samples will be received by the laboratory's sample control group and will be carefully checked for label identification and completed accurate chain-of-custody records. The sample will be tracked from storage through the laboratory system until the analytical process is completed and the sample is returned to the custody of the sample control group for disposal. Generally, access to NYSDOH ELAP certified laboratories is restricted to prevent any unauthorized contact with samples, extracts, or documentation.

6.0 Sample Preparation and Analytical Procedures

Containers, preservation and holding times of environmental samples will be applied as detailed in the NYSDEC ASP. The holding time of samples for VOC analysis of air samples will be 30 days from the Verified Time of Sample Receipt (VTSR). Analyses of environmental samples will be performed by the protocol requirements of the SW-846.

A summary of analyses and related QA/QC samples would be performed on the samples collected at the site are described in the *Work Plan for Soil Vapor and Indoor Air Sampling with Sub-Slab Depressurization System Interim Remedial Measure*. Organic compounds will be analyzed by the following methods:

- Sub-slab Soil Vapor and Indoor/Outdoor Air Samples
    - TCL VOCs by USEPA Method TO-15

If any modifications or additions to the standard procedures are anticipated, and if any nonstandard sample preparation or analytical protocol is to be used, the modifications and the nonstandard protocol will be explicitly defined and documented. Prior approval by Walden's QAO is necessary for any nonstandard analytical or sample preparation protocol used by the laboratory.

7.0 Data Reduction, Validation, Review and Reporting

7.1 Overview

The process of data reduction, review, and reporting ensures that assessments or conclusions based on the final data accurately reflect actual site conditions. This plan presents the specific procedures, methods, and format that will be employed for data reduction, review and reporting of each measurement parameter determined in the laboratory and field. Also described in this section is the process by which all data, reports and work plans are proofed and checked for technical and numerical errors prior to final submission.

7.2 Data Reduction

Data reduction is the process by which raw analytical data generated from the laboratory instrument systems are converted into usable mass concentrations. The raw data, which may take the form of summation of areas under the curve instrument responses, or observations is processed by the laboratory and converted into concentrations expressed in micrograms per kilogram for soil samples and in micrograms per cubic meter for sub-slab vapor and air samples. The analytical laboratory will be required to follow SW-846 data reduction procedures.

Data reduction also includes the process by which raw field data is summarized into tables and graphs, from which quantitative or qualitative assessments can be derived by filter integration and evaluation. Field data that is anomalous will be thrown out to create a linear interpretation of the data that depicts a more accurate trend.

Field data obtained during sampling is summarized on appropriate field forms. This information will be used to assess field conditions at the time of sampling and is summarized and analyzed along with the chemistry data in the final report. Occasionally, the reduction of actual field data requires correcting measurement data for the measurement system's baseline value. The data will be adjusted only after the raw data has been submitted to Walden's QAO and prior to preparation of the final report.

7.3 Walden Data Review

7.3.1 Laboratory Data

The QAO or a designee under the project manager's supervision, will review each analytical data package for completeness (i.e., have all the analyses requested been performed?) and general protocol compliance, such as holding times, detection limits, spike recoveries and surrogate recoveries. The results of this review will be summarized and submitted to the independent validator with the data package. If information is found

to be missing from the data package the analytical laboratory will be contacted and requested to submit any missing information.

7.3.2 Data Usability Report

Walden's QAO will evaluate all of the analytical laboratory data according to the NYSDEC Division of Environmental Remediation (DER) Data Usability Summary Report (DUSR) guidelines to determine if the data presented by the laboratory meets the project specific criteria for data quality and use. Taking into account protocols for sampling, transport, analysis, reduction, and reporting, the QAO will use this information and his/her own experience to establish whether the results of each analysis can be used for the purpose intended. Data deficiencies, analytical protocol deviations, and quality control problems are identified and the effect on the data is evaluated. It will be determined whether the final results can be used as reported, qualified to indicate limitations, or rejected outright.

7.4 Data Validation

Data validation is the systematic process by which data quality is determined with respect to data quality criteria that are defined in project and laboratory QC programs and within the referenced analytical methods. The data validation process consists of an assessment of the acceptability or validity of project data with respect to the stated project goals and the requirements for data usability. Ideally, data validation establishes the data quality in terms of project DQOs. Data validation consists of data editing, screening, checking, auditing, certification, review and interpretation.

The purpose of data validation is to define and document analytical data quality and determine whether the laboratory data quality is sufficient for the intended use(s) of the data. An approved independent data evaluator will not review data prior to its use in reports prepared by Walden unless requested by the NYSDEC. Both the field and laboratory data will be subjected to a level of data validation commensurate with the required data quality level. If required, the data will be validated in accordance with the following document: "Functional Guidelines for Evaluating Inorganic Analyses" and the "Functional Guidelines for Evaluating Organic Analyses" (Technical Directive Document No. HQ-8410-01, USEPA). The validator will evaluate the analytical laboratory's ability to meet the DQOs provided in this QAPP. Noncompliant data will be flagged in accordance with the NYSDEC ASP and corrective action will be undertaken to rectify any problems.

7.5 Reporting

7.5.1 Field Data Reporting

All field real-time measurements and observations will be recorded in project logbooks or field data records. Field measurements may include temperature, wind speed and direction, and PID results, if applicable. All data will be recorded directly and legibly into field logbooks. If entries are changed, the change will not obscure the original entry and the correction will be signed. Field data records will be organized into standard formats whenever possible and retained in permanent files.

7.5.2 Laboratory Data Reporting

All sample data packages submitted by the analytical laboratory will be required to be reported in conformance to the SW-846 deliverable requirements as applicable to the method utilized.

7.6 Data Usage

The soil data will be used to evaluate and determine contamination extent on the site based on the regulatory levels and project cleanup objectives. The sub-slab and indoor air sampling data will be used to monitor indoor air quality impacts.

8.0 Internal Quality Control

8.1 Overview

QC checks will be performed to ensure the collection of representative and valid data. Internal QC refers to all data compilation and contaminant measurements. QC checks will be used to monitor project activities to determine whether QA objectives are being met. All specific internal QC checks to be used are identified in this section.

8.2 Laboratory Quality Control

The analytical laboratory is required to exercise internal control in a manner consistent with the requirements of this QAPP. Control checks and internal QC audits are required by the NYSDEC ASP methods. These include reference material analysis, blank analysis, MS/MSD analysis, cleanups, instrument adjustments and calibrations, standards and internal audits. One qualified professional will proof and check all final reports for transcription and/or calculation errors. Twenty percent of all final reports will be subsequently checked again by a qualified professional. All data tables will be checked to ensure no transcription errors have occurred. Data tables will also be checked to see that any criteria cited for comparison purposes is appropriate and correctly referenced. All calculations will be checked to ensure that they will be properly presented and that resulting values are achievable. If any results cannot be duplicated the calculations will be independently checked for accuracy.

9.0 Performance and System Audits

Performance audits, when performed, will be used to monitor project activities to assure compliance with project DQOs. Walden periodically conducts internal audits of field activities. Walden's on-site project manager will routinely monitor all field activities to ensure that work is done correctly. All sampling and analytical work will be reviewed routinely by the project manager. All data sheets obtained in the field will be initialed and dated by project manager after review and acceptance of the services performed. A field audit will include monitoring and evaluation of sample collection, sample holding times, preservation techniques, field QC and equipment calibration. These audit forms will be kept on file with the Walden project manager for a period of at least one (1) year after completion of the project, then will be transferred to storage and held for an additional five (5) years.

10.0 Analytical Corrective Action

10.1 Laboratory Corrective Action

Corrective actions will be implemented if unsatisfactory performance and/or system audit results indicate that problems exist. Corrective action may also be implemented if the result of a data assessment or internal QC check warrants such action.

11.0 Analytical Methods/Quality Assurance Summary Table

Parameter	Information
Matrix Type	Sub-Slab Soil Vapor and SSDS Effluent Air
Number of Samples to be Collected	Approx. 4 Sub-Slab Samples and 3 Effluent Samples
Number of Field Blanks	1 per sampling event
Number of Trip Blanks	1 per trip
Analytical Parameters	VOCs
Analytical Methods	USEPA Method TO-15
Number of Matrix Spike Samples and Matrix Spike Duplicate to be Collected	To be determined after consultation with selected laboratory
Number and Type of Duplicate Samples to be Collected	1 per day of sampling
Sample Preservation	None
Sample Container Volume and Type	per USEPA Method TO-15
Sample Holding Time	per USEPA Method TO-15

Parameter	Information
Matrix Type	Indoor Air and Outdoor Air
Number of Samples to be Collected	Approx. 3 Indoor Air Samples and 1 Outdoor Air Sample
Number of Field Blanks	1 per sampling event
Number of Trip Blanks	1 per trip
Analytical Parameters	VOCs
Analytical Methods	USEPA Method TO-15
Number of Matrix Spike Samples and Matrix Spike Duplicate to be Collected	To be determined after consultation with selected laboratory
Number and Type of Duplicate Samples to be Collected	1 per day of sampling
Sample Preservation	None
Sample Container Volume and Type	per USEPA Method TO-15
Sample Holding Time	per USEPA Method TO-15

QUALITY ASSURANCE OFFICER RESUME

Lawrence F. Zeman

Project Scientist II

Lawrence has 20 years of environmental and lab consulting experience, taking on difficult laboratory issues and QA/QC. He is very well versed in areas as diverse as regulatory compliance, test protocol development and implementation, management of instrument repair and maintenance, field inspections and on-site audits, correlation studies of various analyses and engineering/technical reporting.

EDUCATION

B.A. Biology, Minor in Chemistry Queens College

LICENSES/ CERTIFICATIONS

New York State ELAP Laboratory Director

New York State ELAP Laboratory Microbiology Assistant Director

New York Department of Health Laboratory Technologist

OSHA HAZWOPER 40-hour & OSHA 10-hour Certified

SELECTED RELEVANT EXPERIENCE

Various Clients, New York

- Performed sample collection of various sample types at industrial facilities and construction & remediation project sites;
  Conducted soil sample collection, field activities oversight and continuous air monitoring for Community Air Monitoring Program (CAMP) in accordance with DER-10 as follows:
  - Elmhurst Tank Park & Playground, Queens, NY (2009 – 2011);
  - Calvert Vaux Park and Athletic Fields, Brooklyn, NY (2009 – 2011), as an Independent Environmental Monitor (IEM) on-site technician;
  - Harlem Rive Greenway, Bronx, NY (2011 – 2012);
  - Beach Channel H.S. Athletic Fields (2016);
  - P.S. 63M William McKinley School, Manhattan, NY (2016);
  - P.S. 131 Abigail Adams Public School, Queens, NY (2017);
  - Forest Hills High School, Queens, NY (2017)
- Developed and implemented new testing protocols and test procedures;
- Conducted instrumentation repair and scheduled maintenance;
- Conducted correlation studies of various analytic procedures;
- Verified laboratory Quality Assurance and Quality Control procedures and data;
- Responsible for regulatory compliance and quality control;
- Prepared and submitted facilities' annual Zoning Performance Standards Compliance Reports, including noise, vibration, odor and opacity testing for DSNY permit renewal;
- Provided environmental services to ensure compliance for facility's NYS DEC Title V Air Facility Permit. Completed monthly, semi-annual and annual compliance reports;
- Conducted field Inspections and on-site audits;
- Preformed field measurements and recording of Noise and Vibration;
- Prepared Engineering & Technical Reports;
- Prepared New York City Community Right-To-Know Law and SARA reports for Industrial facilities

Appendix F

Health and Safety Plan

HEALTH AND SAFETY PLAN

INTRODUCTION

IDA Cleaners ("Client") has requested that MC Environmental, LLC (MCE) conduct a soil vapor and indoor air sampling/mitigation program hereafter defined as "the work" in accordance with a NYSDEC ACO No. CO 2-20170512-183. This Health and Safety Plan (HASP) addresses potential project related physical and chemical hazards. The HASP covers procedures to minimize worker exposure using personal protective equipment (PPE) and safe work practices. This HASP is intended to comply with Occupational Safety and Health Administration (OSHA) regulation, Title 29, CFR, Part1910.120 (20CAR1910.120), "Hazardous Waste Operations and Emergency Response"(OSHA1989).

This HASP is for use by MCE personnel, and for information to others having access to the site during the work. All others entering the work area or involved in the site operations, ownership, oversight, and monitoring, including regulators and public officials must be subject to their own HASP that meets the minimum requirements of Title 29, CFR Part 1910.120. Workers involved in other site activities, not related to the work as defined above, are not covered by this HASP, regardless of their affiliation.

DISCLAIMER

This site-specific HASP has been prepared by MCE for use during field operations on behalf of IDA Cleaners by MCE personnel for the duration of field work on the project known as 579 Kings Highway ("Site"). The HASP is not intended for nor authorized for use as a generic document by others, whether or not they are retained or associated with the project in any way. MCE takes no responsibility for use of this HASP in whole or in part by others, and MCE may revise, substitute or otherwise alter this HASP and its attachments at any time deemed appropriate to address changes in the work or in OSHA regulations.

RESPONSIBILITIES

Michael J. McEachern has been designated as the Site Safety Officer (SSO). He will be responsible for implementing this HASP. In the event that the SSO must leave the site while the work is in progress, an alternate SSO will be designated. The SSO will report all health and safety matters to the project staff that have responsibility for overseeing the planned activities.

SITE DESCRIPTION

The site is a commercial retail store occupied by a dry cleaning store located on the first floor. IDA Cleaners, 579 Kings Highway is located in a commercial strip of two-story frame and brick buildings with retail operations on ground level and residential/office space on the second floor. A residential apartment is located on the second floor of 579

Kings Highway. Two adjacent properties are to be included in the planned activities that will include ambient outside air sampling, indoor air sampling and sub-slab vapor sampling in the store basement storage area and in adjacent buildings.

Part of the project will include installing a sub-slab depressurization system (SSDS) in the basement of 579 Kings Highway, testing the SSDS and long-term SSDS operation.

PLANNED FIELD ACTIVITIES

The following is a brief description of the planned field work:

- Indoor and ambient air sampling using laboratory-supplied Summa canisters.
- Drilling and installing small-diameter soil vapor probes with an electric roto-hammer
- Operating vapor monitoring field instruments (photoionization detector AKA PID)
- Installing a sub-slab depressurization system (SSDS) in the basement of 579 Kings Highway
- SSDS startup and monitoring

HAZARD EVALUATION

Potential physical and chemical hazards that could arise during the work are described below.

- The physical hazards due to working with power tools
- Noise from motorized equipment, including percussion drilling tools
- Dermal contact and accidental ingestion of potentially contaminated liquids
- Slips and falls due to wet or uneven surfaces
- Inhalation of organic vapors

The chemical hazards that may be associated with this site are:

- Exposure to volatile organic compounds (VOC) in vapors and ambient air. VOCs reportedly detected by others near the site include perchloroethylene (PCE), Trichloroethene (TCE) and gasoline-related BTEX compounds.

AIR MONITORING

A Photo Ionization Detector (PID) will be used to screen sub-slab vapor and to monitor for VOCs in ambient air. This instrument will be calibrated each morning before field use, and calibration records will be kept. If the PID indicates that VOCs exceed 5 parts per million (ppm) as benzene equivalent in the breathing zone (2 ft. – 5 ft. above ground level), the

work will be stopped until VOC concentration have dropped to < 5 ppm, or PPE has been adopted to address a possible inhalation hazard.

LEVELS OF PROTECTION

Based on the available data will be performed in Level D protection. In the event that the established benzene action level (noted above) is exceeded, the level of protection will be upgraded to Level C. The following is a description of the personal protective equipment required for each level:

Level D

- Hard hat (optional for all tasks except well drilling).
- Disposable coveralls (optional).
- Safety glasses, goggles, or face shield.
- Steel-toe and shank, chemical-resistant boots.
- Chemical-resistant gloves (optional except when handling soil or water).
- Hearing protection, NRR of 35 decibels (optional).

Level C Same as Level D plus:

- Full face air purifying respirator equipped with organic vapor cartridges.

SITE CONTROL

Prior to the start of the field activities, the SSO will be responsible for the designation of the work zone, plus support and clean zones (if applicable). The work zone will be an area surrounding the immediate work being performed, where the greatest potential hazards exist. Only the necessary workers required to perform the work will be permitted in this zone. A support zone will be established for the storage of equipment

EQUIPMENT DECONTAMINATION

The drill casings, samplers, tools, rig and any piece of equipment that comes in contact (directly or indirectly) with the earth will be steam cleaned or pressure-washed before starting the work. Equipment will be decontaminated between each boring and before leaving the site. Drill cuttings, purge water and other potentially contaminated materials will be retained in 55-gallon drums and kept onsite pending laboratory analysis to determine proper disposal.

FIELD SAFETY OPERATIONS

Tailgate Safety Meeting

A tailgate safety meeting will be held each day to discuss the associated hazards. Attendees will be noted on the Tailgate Safety Meeting Form (Attachment 2). Items to be covered in the Tailgate Safety Meeting will include but not be limited to the following:

- All utilities and structures will be cleared and marked out prior to the start of any ground intrusive work. Attachment 4 will be used to record this information.

- The SSO will inform all subcontractors of the potential hazards associated with the site and the planned field activities. A copy of the HASP will be made available for their review.

- No eating, drinking, or smoking will be permitted in the work and support zones.

- No sources of ignition will be permitted in the work and support zones.

- Calls for help will be made via the cellular phone.

- The buddy system will be used in the work zone.

- During hazardous weather conditions, such as lightning and thunder storms, work will cease immediately.

Emergency Plan

Field communication should not be a problem since all tasks will be performed in Level D protection. If the action level is exceeded and personnel are upgraded to Level C protection, verbal communications may be impeded. A universal set of hand signals will then be used as follows:

Hand gripping throat: Can't breathe.

Grip partner's wrist or place hands around waist: Leave work area immediately.

Hand on top of head: Need assistance.

Thumbs up: Ok, I'm all right.

Thumbs down: No, negative.

Communications onsite and from the site will be by cellular telephone or two-way radio. Before stating the work, the 911 emergency switchboard location will be verified as the responding agency closest to the site, since cellular 911 calls may sometimes be routed unpredictably in overlapping cell system areas.

All injuries and illnesses will be reported to the SSO. If medical attention is needed, the injured worker will be decontaminated, if possible, prior to leaving the site. The SSO may stop the work, will investigate the accident, and take corrective measures, if needed, before resuming the work. The SSO will complete the accident reporting form, OSHA 101, attached to this HASP (Attachment 3) for all injuries. The completed OSHA 101 form should be forwarded to the office health and safety manager within six days for recording into the OSHA 200 log. In case of a fatality, or if five or more workers are hospitalized in a single incident, the SSO will contact the office health and safety manager immediately for OSHA reporting purposes.

Emergency contact information / telephone numbers are given on the next page.

EMERGENCY TELEPHONE NUMBERS/

EMERGENCY MEDICAL CARE

(IDA Cleaners, 579 Kings Highway, Brooklyn, NY)

Agency	Contact	Phone Number
Fire Department	NYFD	911
Ambulance	NYFD	911
Police	NYPD	911
Hospital	Mt. Sinai Hospital (Brooklyn)	718-252-3000
Client Contact	Salvatore Foresta	
MC Environmental (Site Safety Officer)	Michael J. McEachern	(631) 321-4500*Office* (516) 242-4981 *Cell*
MC Environmental (Corporate)	Michael J. McEachern President	(631) 321-4500 *Office* (516) 242-4981 *Cell*
Regulatory (State)	NYSDEC (24-Hour Hotline)	800 457-7362
Regulatory (Regional EPA)	New York, New York	(212) 264-2525
Regulatory (Reg. OSHA)	Avenel, New Jersey	(908) 750-2270

CHEMTREC	Chemical Transportation Emergency Center	1-800-262-8200
USEPA	Environmental Response	(908) 821-8660
Poison Information Center	Long Island Poison Control Center	(800) 222-1222

DIRECTIONS TO HOSPITAL (EMERGENCY ROUTE)

Direction to the Nearest Hospital (Mt. Sinai Hospital) from IDA Cleaners

- **Take Kings Hwy. east from 579 Kings Hwy.**
- **Continue past Ocean Parkway, staying on Kings Hwy. for approximately 2 miles**
- **Mt. Sinai Hospital will be on the left at 3201 Kings Hwy.**

ATTACHMENT 1

SITE VISITORS LOG

THE UNDERSIGNED VISITORS REQUIRE ENTRANCE TO THE SITE AND HAVE THOROUGHLY READ THE HEALTH AND SAFETY PLANS. I UNDERSTAND THE POTENTIAL HAZARDS AT THE SITE AND THE PROCEDURES TO MINIMIZE EXPOSURE TO THE HAZARDS, WILL FOLLOW THE DIRECTION OF THE SITE HEALTH AND SAFETY MANAGER, AND WILL ABIDE BY THE HEALTH AND SAFETY PLAN. (Attach additional pages as needed)

NAME	COMPANY	DATE	SIGNATURE

ATTACHMENT 2

TAILGATE SAFETY MEETING

Prepared by _____

Client Project _____

Date Work Location_____

Work Location_____

Type of Work to be done _____

SAFETY TOPICS PRESENTED

Chemical Hazards Physical Hazards / Underground Utilities Protective Clothing / Equipment Special Equipment Emergency Procedures

Hospital/Clinic Phone: Mt. Sinai Hospital: 718-252-3000
Address: 3201 Kings Highway, Brooklyn

Paramedic Phone: 911

Police Dept. Phone: 911

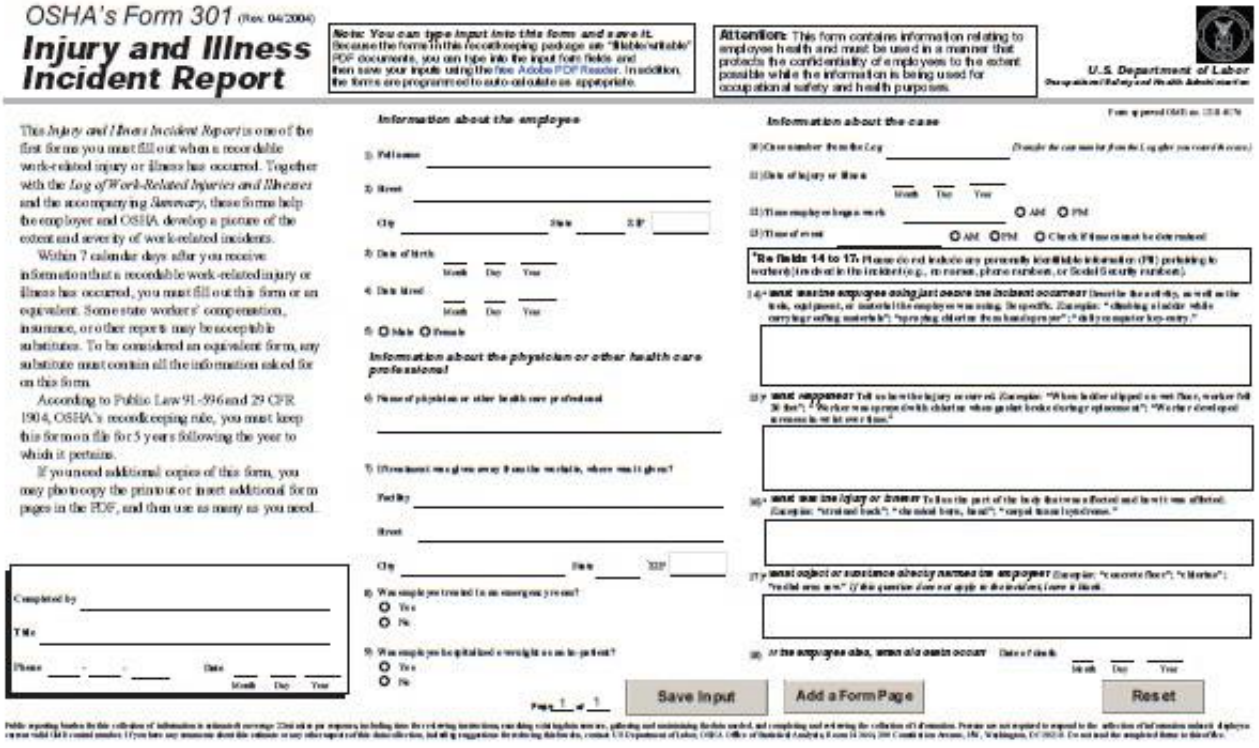
Other (HAZMAT, etc.) USEPA Phone: (908) 821-8660

ATTENDEES

NAME PRINTED SIGNATURE

ATTACHMENT 3

ACCIDENT REPORTING FORM, OSHA 301



OSHA's Form 301 (Rev. 04/2004)

Injury and Illness Incident Report

Note: You can type input into this form and save it. Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader. In addition, the forms are programmed to auto-calculate as appropriate.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

U.S. Department of Labor

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy the printout or insert additional form pages in the PDF, and then use as many as you need.

Completed by

Title

Phone

Date

Information about the employee

1) Full name

2) Street

City State ZIP

3) Date of birth

4) Date hired

5) Male Female

Information about the physician or other health care professional

6) Name of physician or other health care professional

7) If treatment was given away from the worksite, where was it given?

Facility

Street

City State ZIP

8) Was employee treated in an emergency room?

Yes

No

9) Was employee hospitalized overnight as an in-patient?

Yes

No

Page 1 of 1

Save Input Add a Form Page Reset

Information about the case

10) Case number from the Log

11) Date of injury or illness

12) Time employee began work

AM PM

13) Time of event

AM PM Check if time cannot be determined

Re fields 14 to 17: Please do not include any personally identifiable information (PII) pertaining to workers(s) involved in the incident (e.g., no names, phone numbers, or Social Security numbers).

14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing material"; "spraying chlorine from a hand sprayer"; "daily computer key-entry."

15) **What happened?** Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."

16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected; Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."

17) **What object or substance directly harmed the employee?** Examples: "concrete floor"; "chlorine"; "radial arm saw." *If this question does not apply to the incident, leave it blank.*

18) *If the employee died,* when did death occur? Date of death

Appendix G

Generic and Special Requirements CAMP

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

New York State Department of Health
Special Requirements Community Air Monitoring Plan

Special Requirements for Work within 20 Feet of Potentially Exposed Individuals or Structures
When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m3 or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work with Co-Located Residences or Facilities
Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under “Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures” except that in this instance “nearby/occupied structures” would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

Appendix F

Work Plan Addendum from Walden to NYSDEC/NYSDOH

WALDEN ENVIRONMENTAL ENGINEERING

Sent via email to Mandy.Yau@dec.ny.gov

July 22, 2020

Ms. Mandy Yau
NYS Dept. of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101

Re: I.D.A. Cleaners
NYSDEC Site No. 224243
Work Plan for Soil Vapor and Indoor Air Sampling and with Sub-Slab Depressurization System Installation

Dear Ms. Yau:

This letter was prepared in response to the comments on the *Work Plan for Soil Vapor and Indoor Air Sampling with Sub-Slab Depressurization System Interim Remedial Measure* (the "Work Plan") dated June 2019 set forth in the New York State Department of Environmental Conservation (NYSDEC) letter dated April 13, 2020 and the New York State Department of Health (NYSDOH) letter dated April 3, 2020. The Work Plan was prepared by Walden Environmental Engineering, PLLC (Walden) and MC Environmental, LLC (MC) on behalf of IDA Cleaners (the Remedial Party, or RP).

This response is intended to address the NYSDEC and NYSDOH comments outlined below. This response also addresses the NYSDEC and NYSDOH's required Community Air Monitoring Program (CAMP) discussed in email correspondence dated July 13, 2020. The enclosed Work Plan has been updated to reflect the changes discussed below. Please note that various sections were edited and added to the report. The appropriate sections that address the NYSDEC and NYSDOH comments are referenced in the letter.

NYSDEC Comments on the Work Plan

1) **Section 2.1, Indoor Air and Outdoor Ambient Air Sampling - A concurrent indoor air, outdoor (ambient) air and sub-slab vapor sample must be collected. Please add a discussion for soil vapor sampling procedures to include, at a minimum, purging and seal check.**

Walden Response:
It is understood that the indoor air, ambient air and sub-slab vapor samples proposed in the Work Plan must be collected concurrently. Section 2.1.2 has been revised to include the following:

Prior to and immediately after sampling at each point, a pressure gauge will be used to check each Summa® canister for vacuum, and the pressure will be recorded. In the case of sub-slab vapor sampling, the ground surface will be sealed in advance to prevent ambient air infiltration during purging and sample collection, and tracer gas such as helium, will be used to test the seal. A regulator will be used to keep flow rates during purging and sampling below 0.2 liters per minute to minimize outdoor air infiltration during the 24-hour sampling period.

The volume of air in each of the vapor/air sampling points (volume of sampling probe and/or tube depending on sample being secured) will be calculated, and a minimum of one to three volumes will be purged at a flow rate of 0.2 liters (or 200 mls) per minute immediately prior to sample collection. The soil gas/air samples will then be collected by opening the valve of the Summa® canister to draw air through the regulator to collect the sample at a rate of 0.2 liters per minute for 24 hours as specified above.

2) **Section 2.2, Sub-slab Vapor Sampling - Please clarify whether the sampling points would be converted into vacuum monitoring points.**

Walden Response:
Yes, the sampling points will be converted into vacuum monitoring points that will be used to confirm that the sub slab has been successfully depressurized by the future SSDS. The text of the Work Plan has been indicated to reflect this.

3) **Section 3.0, Additional Soil Vapor Sampling Port Installations - Please provide a template access letter to be used for corresponding with adjacent property owners. Please also specify that attempts to gain access to adjacent buildings will be documented.**

Walden Response:
The template letter is provided in Attachment 1. Furthermore, it has been included in the Work Plan's appendices. Please note this section has been restructured and can now be found in section 2.1.1 of the report.

4) **Section 2.1, Indoor Air and Outdoor Ambient Air Sampling - This section states that "all of the above air samples will be collected using 6-liter Summa canisters equipped with 24-hour regulators" while Section 4.0, Vapor Probe Installation and Sampling, states that "the sub-slab vapor samples will be collected as 1-hour composite samples maintaining the <0.2L/min. flow rate specified in NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006." Please clarify this discrepancy.**

Walden Response:
The text of the report has been revised to state the samples will be collected using 6-liter Summa canisters equipped with 24-hour regulators.

5) **The QAPP should include SOPs for the different types of vapor/air sampling.**

Walden Response:
The QAPP has been revised to include these SOPs and is provided as Appendix E of the Work Plan.

6) **Please include a Community Air Monitoring Plan (CAMP) to be used during the implementation of this work and any intrusive activities (see DER-10 appendix 1A).**

Walden Response:
As per correspondence with the NYSDEC and NYSDOH dated July 13, 2020, a special requirements CAMP will be adhered to during the course of intrusive activities below the slab.

7) **Please add the submission of electronic data deliverables ("EDDs") as part of the report preparation.**

Walden Response:
This requirement has been added to Section 5.0 of the Work Plan.

8) **Please note that advance notice of field work and daily reports are required as per DER-10.**

Walden Response:
The following language has been added to Section 6.0 of the Work Plan:

NYSDEC and NYSDOH will be notified of mobilization to the field at least ten (10) days in advance performing the investigation. Further, daily reports will be submitted to the agencies by e-mail for each day of investigatory work performed.

The NYSDEC will be notified at least ten (10) days prior to the start of the SSDS installation. Further, daily reports will be submitted by e-mail throughout the installation of the SSDS. Upon completion of the installation, Walden will submit the SSDS engineering report to NYSDEC with P.E.-stamped as-built drawings per NYSDEC requirements.

9) **Please add MSDSs of relevant chemicals to the HASP.**

Walden Response:
The appropriate Safety Data Sheets (SDSs) of relevant chemicals are provided in Attachment 2, and have been included in the updated Work Plan's appendices. The only anticipated chemical substances to be used in performing the fieldwork at this time are helium and cement.

10) **Please add a schedule, in the form of a Gantt chart, for the proposed work and reporting.**

Walden Response:
The requested Gantt chart and anticipated schedule is provided in Attachment 3.

11) The Work Plan was prepared by both MC Environmental and Walden Environmental Engineering, PLLC. Please explain the role of each entity with respect to the scope of work and follow the appropriate guidance from Department of Education regarding preparation of engineering documents.

Walden Response:
As stated in Section 1.0 of the Work Plan, MCE and Walden have partnered on this project. Joseph M. Heaney III, P.E. of Walden (New York State P.E. license #068022-1) shall serve as the engineer of record for this project and will oversee all aspects of this work. Walden shall sign and stamp the finalized Work Plan. Following the completion of the investigation, Walden shall appropriately inspect the SSDS installation at the Site and will collect sub-slab pressure readings at the time of the system start up. Finally, Walden shall prepare and stamp a Construction Completion Report (CCR) that will include P.E.-stamped final as-built drawings of the SSDS.

MCE, a New York State Professional Geologist led firm, will perform all aspects of the field work and vapor sample collection while coordinating with Walden. MCE will also prepare key sections of the CCR as outlined in Section 6.0 of the Work Plan.

12) Please note that any data to be used in the design of the proposed SSDS must be Category B deliverables and have corresponding DUSRs prepared. The persons who will be preparing the DUSR must be identified in the work plan and must provide a copy of his/her resume to show s/he has appropriate education and/or experience to qualify for this role.

Walden Response:
The analytical data to be collected during the investigation shall be provided as Category B deliverables with corresponding DUSRs. Mr. Larry Zeman of Walden has the appropriate experience to perform this work. A copy of Mr. Zeman's resume is provided in Attachment 4.

NYSDOH Comments on the Work Plan

1) It is not clear if this "Initial Work Plan" is meant to be a scope of work for an IRM (as stated several times in this document, including the cover letter) or the actual IRM work plan (as stated in the title of this document). Please clarify. All comments will assume that this document is meant to be the actual IRM work plan;

Walden Response:
This Work Plan is intended to serve as the actual and only Work Plan for this Site prior to the installation of the SSDS. Following the installation of the SSDS and the completion of field work, a Construction Completion Report with as-built drawings of the SSDS will be prepared and submitted.

2) Include a figure showing the site layout, with all cracks, perforations, drains, sumps, utilities, dry cleaning equipment, etc., that may present preferential pathways for SVI;

Walden Response:
This figure will be prepared at the time of the Soil Vapor Intrusion Inventory. All cracks, perforations, drains, sumps and utilities will be sealed prior to the installation of the SSDS. Before and after photos will be supplied in a photolog following the sealing activities. Please note that there are no pieces of dry-cleaning equipment and/or chemicals located in the basement level of the Site.

3) **More detail is needed to show necessary system design features (location in building, specific component locations, etc.) and a P.E. stamped as-built is recommended for this work plan;**

Walden Response:
The purpose of Figure 1 in the Work Plan is to provide a concept drawing of the SSDS. The full details of the SSDS will be provided in the CCR that will be created after the SVI investigation is complete. Walden's P.E.-stamped as-built drawings will be provided as part of the CCR.

4) **Introduction:**
   a) Include details regarding the on-site dry cleaner operation such as what retail space(s) the dry cleaner occupies, how long it has occupied this space, what kind of dry-cleaning products the dry cleaner uses, what kind of dry-cleaning machine is used and how is it housed, where process operations take place, etc. Products should be confirmed/documented on the building inspection and product inventory for the on-site building;
   b) The on-site and adjacent building layouts should be explained and displayed, revise;
   c) Note: The sampling plan may need to be expanded based on these operations and building layouts. Sample locations are to be reviewed by DEC/DOH and approved based on these details after revision;

Walden Response:
The text of Section 1.0 has been updated to reflect these comments.

5) **Section 2.0 Indoor Air and Outdoor Ambient Air Sampling:**
   a) **1st paragraph: Clarify in this paragraph that the sampling will be conducted in accordance with the 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Additionally, include that the size of the Summa canisters will be 6L and that the flow rate will not exceed 0.2 L/min;**
   b) **2nd paragraph: Update the schedule and include that indoor and outdoor air samples will be taken from 3-4 feet above ground, to represent air at the breathing zone;**
   c) **3rd paragraph: Include here that indoor building surveys will be performed for all three buildings (on-site and adjacent) and that the vapor point installations will be tested for ambient air infiltration with a tracer gas (i.e. helium). The two existing vapor points in the on-site building may need to be confirmed with tracer gas testing. Please include photo documentation of this process;**

Walden Response:
The text of Section 2.0 has been updated to reflect these comments. Please note that the original work plan called for sampling to be performed in the 2019-2020 heating season. The initial SVI sampling is now proposed to take place in July 2020. As per the comment below, confirmation sampling will take place following the start up of the SSDS. Said sampling will be conducted in the 2020-2021 heating season.

6) **Sampling Table:**
   a) **Pending details requested above, the 1st floor of adjacent buildings may need to be sampled if dry cleaner (and/or dry cleaner processing) is also on 1st floor;**
   b) **Clarify if 'SSDS' means effluent. Additionally, confirmation indoor air sampling must be conducted post-mitigation to confirm the system's effectiveness. Revise to clarify baseline and confirmation sampling in this table (a paragraph describing the purpose of confirmation sampling and how it will be conducted should also be included in Section 2.0);**

   Walden Response:
   "SSDS" sampling shall involve a Summa canister being connected to a sampling port at the effluent of the system. Table 1 and Section 2.0 have been updated to include a description of the system start-up sampling.

7) **Section 3.0 Additional Soil Vapor Sampling Point Installations: Permanent soil vapor probes are recommended and should be considered in the design, so that the pressure field extension test (to be completed after the system is installed) can be conducted and for the purpose of collecting representative sub-slab vapor samples in the future. If maintained, these permanent vapor points can eventually be used (along with other information) to support a determination that the system can be decommissioned because it is not needed to address exposures related to soil vapor intrusion;**

   Walden Response:
   The text of Section 2.0 has been updated to reflect these comments. However, it should be noted that the owners of the adjacent buildings may not allow access for the installation of temporary or permanent monitoring points. Alternatively, the two additional vapor sampling points could be installed at the periphery of the IDA Cleaner's basement in order to collect representative samples and/or pressure readings for the adjacent spaces.

8) **Pg. 4, 1st paragraph**
   a) **Access efforts need to be properly documented and included in the following report;**
   b) **State that the building inspection and product inventory is to be conducted for all three buildings (575, 579, and 581). It is not clear if cracks found in the adjacent buildings will be addressed to prevent negative effects to the sub-slab depressurization system for the on-site building. Please clarify;**
   c) **Additionally, it is not clear if PID screening of the basement of the on-site building will be conducted before sampling of the adjacent basements or if the on-site basement is also to be sampled with a Summa canister. Please clarify;'**

Walden Response:
The text of Section 2.0 has been updated to reflect these comments. A template access request letter is provided in Attachment 1. Please note that in the interest of minimizing intrusion into the adjacent spaces, no sealing of the cracks or seams in those spaces is proposed in this Work Plan. Section 2.0 of the report serves to describe the sampling that will take place in the adjacent buildings, if access is granted. The on-site basement will be screened with a PID, but only the second floor of the building, which is comprised of residential space, will be sampled with a Summa canister at the same time as the adjacent spaces. This portion of the work is described in Section 2.0

9) **Pg. 4, 2nd paragraph: The statement, "MCE will direct E Phase 2 to use a portable electric hammer to drill through the concrete basement slabs..." should be removed since vapor point installation is detailed in the next section;**

Walden Response:
The text of the Work Plan has been updated to reflect these comments.

10) **Section 4.0 Drilling Vapor Probe Installation and Sampling:**
    a) **Clarify why the soil vapor probes are proposed to go down to two feet. A sub-slab vapor point should be only a few inches at most, beneath the slab; revise**
    b) **Include testing with tracer gas in this section;**
    c) **Sub-slab samples should be collected for the same duration as indoor air samples (i.e. concurrently), which is recommended in the SVI Guidance. Revise;**

Walden Response:
The text of Section 2.0 has been updated to reflect these comments.

11) **Section 5.0 Sub-Slab Depressurization IRM (entire section needs revision for clarity and consistency; this work plan does not match Appendix C (i.e. "Scope of Work"):**
    a) **#3. SSDS #3: It is not clear if the six-inch holes are pits (as shown in Figure 3) or what part of the SSDS the "PVC pipe" refers to. It is not clear in this process description or from Figures 3 and 4 where the perforated piping is. Additionally, there is no mention of washed stone as shown. Clarification and revision are needed;**
    b) **#4. Explain floor vents;**
    c) **#5. Regarding riser pipe height, confirm that three feet is enough to clear rooflines of adjacent buildings and if this meets NYC Department of Buildings regulation/guidance, as well as the SVI guidance. Additionally, it is recommended that a manometer is included in the design, so occupants of the on-site building can confirm if the system is working;**
    d) **It should be clarified in this section, that the P.E. certified as-built of the system design will be included in the work plan and that the IRM will be initiated upon approval of work plan by DEC. Revise;**

Walden Response
Please note that the report has been restructured. Section 5.0 has been changed to section 3.0, which has been updated to reflect these comments.

12) **Section 6.0 Field and General Project Oversight:**
    a) **Regarding "sampling services in accordance with applicable sections of NYSDEC DER- 10", reference specific sections;**
    b) **A Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) need to be mentioned in this section. Additionally, the Special Requirements language must be included in the CAMP for this site, which should be based on DER-10 Appendices 1A and 1B;**

    Walden Response:
    Please note that the report has been restructured. Section 6.0 has been changed to section 4.0, which has been updated to reflect these comments. The text of Section 4.0 has been updated to reflect these comments. As per correspondence with the NYSDEC and NYSDOH dated July 13, 2020, a special requirements CAMP will be adhered to during the course of intrusive activities below the slab.

13) **Section 7.0 Report Preparation: Confirm if this section should be relabeled Construction Completion Report (CCR). If so, confirm that the items listed in this section would meet the requirements of a CCR, as per DER-10 (which should include CAMP data and as-builts);**

    Walden Response:
    This section (now section 5.0) has been revised to include the preparation of a CCR. The CCR will be prepared in accordance with DER-10 requirements.

If you have any questions or require any additional information, please call (516) 624-7200.

Very truly yours,
Walden Environmental Engineering, PLLC

Joseph M. Heaney III, P.E.
Principal

Erica Johnston
Erica Johnston
Environmental Scientist

cc: Jane O'Connell, Alali Tamuno – NYSDEC
Scarlett McLaughlin, Angela Martin – NYSDOH
Michael Bogin – Sive Paget & Riesel PC
Michael McEachern – MC Environmental, LLC
C. Westerman – NYSDOH MARO
C. D'Andrea – NYCDHMH
G. Burke – NYSDEC Central Office

Attachment 1 – Template Access Letter
Attachment 2 – Safety Data Sheet

Attachment 3 – Tentative Project Schedule
Attachment 4 – Data Validator's Resume

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Attachment 1

Template Access Letter

WALDEN ENVIRONMENTAL ENGINEERING

Sent by Certified Mail # _____

(Date)

Property Owner
575 Kings Highway
Brooklyn, New York 11223

Re: Permission for Property Access
575 Kings Highway
Brooklyn, New York

To Whom it May Concern:

Walden Environmental Engineering, PLLC ("Walden") and MC Environmental ("MCE") are the environmental consulting engineer for IDA Cleaners, Inc, the owner of property located at 575 Kings Highway, New York (the "Site") and has been engaged to investigate sub slab soil vapor conditions.

The investigation of the Site is being overseen by the New York State Department of Environmental Conservation ("NYSDEC") and the New York State Department of Health (NYSDOH). The Site owner is working with the NYSDEC and the NYSDOH to investigate and to make necessary improvements the Site with NYDEC and NYSDOH approval.

Access to your property, located at 575 Kings Highway, Brooklyn, New York is requested to perform indoor air and sub-slab soil vapor sampling. The sampling results will be used to support an engineering design for the IDA Cleaners Site. All of the work will be performed in accordance with a work plan reviewed and approved by both the NYSDEC and NYSDOH. All sampling will be coordinated by Walden and/or MCE, which will oversee the work of qualified subcontractors who will be retained to conduct the actual drilling and sampling efforts.

The work to be conducted at 575 Kings Highway, Brooklyn, New York is detailed below with a tentative sequence of events. Please note your presence is required during the times that Walden, MCE, and the subcontractors are to be on your property. Refer to the attached photographs for additional information.

First Day (Walden/MCE, Utility Mark-out Subcontractor and Drilling Subcontractor)

- Walden/MCE will inspect the basement/lowest level of your property to inventory chemicals stored on-site (such as cleaning products, paints, etc.) and select an appropriate location for sampling. The sampling location will be selected in an area with an unfinished floor if possible.
- A utility mark-out contractor will perform a Ground Penetrating Radar (GPR) survey to mark out the proposed sampling location and to ensure that no sub-surface structures and/or utility lines will be impacted by the investigation.
- After an appropriate sampling location has been selected based on Walden/MCE's inspection and the GPR survey (and approved by the property owner), the drilling contractor will drill through the basement/lowest level floor slab and install a temporary sub-slab sampling port below the concrete slab. (Note that the floor surface will be restored with cement immediately after the sample is collected.) A small diameter hole (approximately one inch) will be drilled through the concrete floor slab and into sub-slab material approximately two (2) inches below the bottom of the floor slab. A temporary probe constructed from inert tubing (e.g. polyethylene, stainless steel, nylon, Teflon®, etc.) will be installed and sealed to the floor. Testing will be performed to ensure that the seal is tight. The temporary probe will remain until vapor sampling results are received in case a confirmation sample has to be collected. Once the temporary probes are no longer needed, they will be removed and the openings in basement floor restored with fresh concrete.
- Walden/MCE will set up air sampling canisters to collect one sub-slab vapor sample and one indoor air sample from the basement/lowest level of the property.
- The sub-slab vapor sample will be collected from the temporary sub-slab sampling port installed below the concrete slab.
- The indoor air sample will be collected concurrently with the sub-slab vapor sample, at approximately the same location as the sub-slab vapor sample.
- A sampling canister will be placed adjacent to the sub-slab sampling port and the indoor air sampling location. The sub-slab and indoor air samples will be collected using laboratory-provided sampling canisters over a 24-hour period.
- The sampling probe, canisters and all sampling equipment must not be disturbed during the sampling period.
- The total anticipated time within your residence for this portion of the work would be approximately two (2) to three (3) hours.

Second Day (Walden/MCE)

- Walden/MCE will return at the end of the 24-hour sampling period to remove the sampling canisters. The tubing used to connect the sub-slab vapor sampling canister to the probe will be removed. The sub-slab vapor probe will then be removed and the floor surface will be restored in kind.
- The total anticipated time within your residence for this portion of the work would be approximately 30 minutes.

The Site owner, Walden and MCE will comply with the following conditions of access to the 575 Kings Highway, Brooklyn, New York property:

- The property owner will be notified at least 10 days prior to the scheduled sampling date. Please indicate below any dates when you are unavailable to provide Walden/MCE entry to the property, so the sampling can be scheduled accordingly.
- The procedures set forth in the sampling work plan approved by the NYSDEC and NYSDOH will be followed. A copy of this work plan will be made available to you upon request. Walden/MCE will strive to schedule the work and subcontractors so that access to the property is required only two (2) times: once to install the sampling location, and set the canister(s) for sampling; and once after the canisters are set (approximately 24 hours after the sampling begins) to retrieve them. Walden/MCE will attempt to accommodate your scheduling preferences to the extent feasible.
- The work will be performed in a clean and orderly fashion.

Please sign below to indicate your permission (or denial of permission) to allow the Site Owner, Walden and MCE to access the 575 Kings Highway, Brooklyn, New York property for the sampling described herein, and return to Walden/MCE by mail (stamped envelope enclosed), fax to 516-624-3219, or email to ejohnston@walden-associates.com. Kindly respond to this letter with your permission or denial of permission within five (5) business days of receipt so that sampling may begin.

If you have any questions, please contact Angela Martin at the New York State Department of Health at 518-402-7860, Mandy Yau at the New York State Department of Environmental Conservation at 518-402-9621, Michael McEachern at MCE at (516) 242-4981, or Erica Johnston at Walden Environmental Engineering at (516) 624-7200.

Thank you for your courtesy and cooperation.

Very truly yours,
Walden Environmental Engineering, PLLC.

Erica Johnston
Project Scientist

and
MC Environmental, LLC

Michael McEachern, P.G.
Principal

Access authorized by owner of property located at 575 Kings Highway, Brooklyn, New York:

_____ _____
Signature Date

_____
Print Name

-OR-

Access denied by owner of property located at 575 Kings Highway, Brooklyn, New York:

_____ _____
Signature Date

_____
Print Name

Please list any dates when access to your property is not available: _____

Attachment 2

Safety Data Sheet

SAFETY DATA SHEET

Helium

Section 1. Identification

GHS product identifier : Helium

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046,Helium USP

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : helium (dot); Helium-4; He; o-Helium; UN 1046,Helium USP

SDS # : 001025

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046,Helium USP

Product code : 001025

CAS number/other identifiers

CAS number : 7440-59-7

Ingredient name	%	CAS number
Helium	100	7440-59-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Helium	**ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant].**

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : -272.2°C (-458°F)

Boiling point : -268.9°C (-452°F)

Critical temperature : -267.9°C (-450.2°F)

Flash point : [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 0.14 (Air = 1) Liquid Density@BP: 7.8 lb/ft3 (125 kg/m3)

Specific Volume (ft^3/lb) : 96.1538

Gas Density (lb/ft^3) : 0.0104

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.28

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 4 g/mole

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Helium	0.28	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1046	UN1046	UN1046	UN1046	UN1046
UN proper shipping name	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
Passenger Carrying Road or Rail Index 75

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

Section 15. Regulatory information

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Thailand : Not determined.

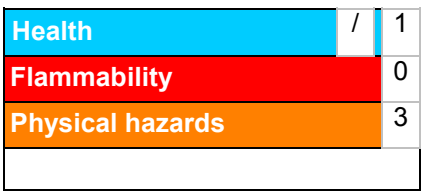
Turkey : Not determined.

United States : This material is listed or exempted.

Viet Nam : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Section 16. Other information

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
GASES UNDER PRESSURE - Compressed gas	Expert judgment

History

Date of printing : 4/23/2018

Date of issue/Date of revision : 4/23/2018

Date of previous issue : 1/29/2018

Version : 1.01

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)
Safety Data Sheet
according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.
Date of issue: 01/20/2014 Revision date: 01/20/2014 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Sakrete Fast Setting Cement Patcher

Sakrete Leak Stopper Hydraulic Cement (Gray)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

Sakrete of North America
8201 Arrowridge Blvd.
28273 Charlotte, NC - USA
T 866-725-7383

1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Corrosive to Metals 1
Acute toxicity 4 (Oral)
Skin Irritation 2
Serious Eye Damage 1
Skin Sensitization 1
Carcinogenicity 1A
Specific Target Organ Toxicity After Single Exposure 3
Specific Target Organ Toxicity After Repeated Exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : May be corrosive to aluminium. Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : Keep only in original container. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust. Absorb spillage to prevent material damage. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. Store in corrosive resistant container with a resistant inner liner. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

Other hazards not contributing to the classification : Not applicable.

2.4. Unknown acute toxicity (GHS US)

Sakrete Leak Stopper Hydraulic Cement (Gray): 47% of the mixture consists of ingredient(s) of unknown acute toxicity.
Sakrete Fast Setting Cement Patcher: 13 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	0.5 - 75	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 STOT RE 1, H372
Cement, alumina, chemicals	(CAS No) 65997-16-2	10 - 30	Skin Irrit. 2, H315 Eye Dam. 1, H318
Cement, portland, chemicals	(CAS No) 65997-15-1	5 - 30	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Calcium oxide	(CAS No) 1305-78-8	1.5 - 7	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Sodium carbonate	(CAS No) 497-19-8	1 - 5	Met. Corr. 1 H290 Eye Irrit 2A H319
Aluminum sulfate	(CAS No) 10043-01-3	1.5 - 3[1]	Met. Corr. 1, H290 Eye Dam. 1, H318
Calcium hydroxide	(CAS No) 1305-62-0	0.5 - 2[2]	Skin Corr. 1B, H314 Eye Dam. 1, H318
Calcium magnesium hydroxide (CaMg(OH)4)	(CAS No) 39445-23-3	1.5 - 3[2]	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Calcium magnesium hydroxide oxide (CaMg(OH)2O)	(CAS No) 58398-71-3	1.5 - 3[2]	Not classified
Limestone	(CAS No) 1317-65-3	0. 5 - 1.5	Not classified
Calcium sulfate	(CAS No) 7778-18-9	0. 5 - 1.5	Not classified
Gypsum (Ca(SO4).2H2O)	(CAS No) 13397-24-5	0. 5 - 1.5	Not classified

[1] Sakrete Fast Setting Cement Patcher
[2] Sakrete Leak Stopper Hydraulic Cement

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitization by skin contact.

Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : Harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : Not available.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

Firefighting instructions : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Absorb spillage to prevent material damage.

6.3. Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Do not swallow. Avoid generating and breathing dust. Good housekeeping is important to prevent accumulation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store in dust-tight, dry, labelled containers. Keep container tightly closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Do not store in an area equipped with emergency water sprinklers. Store in corrosive resistant container with a resistant inner liner.

7.3. Specific end use(s)

No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m^3)	(30)/(%SiO_2 + 2) mg/m^3 TWA, total dust (250)/(%SiO_2 + 5) mppcf TWA, respirable fraction (10)/(%SiO_2 + 2) mg/m^3 TWA, respirable fraction

Cement, portland, chemicals (65997-15-1)		
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m^3)	5 mg/m³

Calcium sulfate (7778-18-9)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

Gypsum (Ca(SO4).2H2O) (13397-24-5)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

Limestone (1317-65-3)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m^3)	5 mg/m³

Calcium oxide (1305-78-8)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m^3)	5 mg/m³

Calcium hydroxide (1305-62-0)		
USA ACGIH	ACGIH TWA (mg/m³)	5 mg/m³

Calcium hydroxide (1305-62-0)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear suitable waterproof gloves.

Eye protection : Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Skin and body protection : Wear suitable waterproof protective clothing.

Respiratory protection : A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

Other information : Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Powder.

Colour : Various.

Odour : Characteristic.

Odour threshold : No data available.

pH : 10 - 13

Relative evaporation rate (butylacetate=1) : No data available.

Melting point : No data available.

Freezing point : No data available.

Boiling point : No data available.

Flash point : No data available.

Self ignition temperature : No data available.

Decomposition temperature : No data available.

Flammability (solid, gas) : Not Flammable.

Vapour pressure : No data available.

Relative vapour density at 20 °C : No data available.

Relative density : No data available.

Solubility : No data available.

Log Pow : No data available.

Log Kow : No data available.

Viscosity, kinematic : No data available.

Viscosity, dynamic : No data available.

Explosive properties : No data available.

Oxidising properties : No data available.

Explosive limits : No data available.

9.2. Other information

VOC content : 0%, Not applicable; 0 wt, Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use. Product slowly erodes aluminium.

10.2. Chemical stability

Stable under normal storage conditions. Keep dry in storage.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Moisture.

10.5. Incompatible materials

Wet cement is alkaline and incompatible with acid, ammonium salts and aluminum metal.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Quartz (14808-60-7)	
LD50 oral rat	500 mg/kg

Calcium sulfate (7778-18-9)	
LD50 oral rat	> 3000 mg/kg

Calcium oxide (1305-78-8)	
LD50 oral rat	500 mg/kg

Calcium hydroxide (1305-62-0)	
LD50 oral rat	7340 mg/kg

Sodium carbonate (497-19-8)	
LD50 oral rat	4090 mg/kg
LC50 inhalation rat (mg/l)	2300 mg/m³ 2h

Aluminum sulfate (10043-01-3)	
LD50 oral rat	1930 mg/kg

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)	
ATE (oral)	590 - 720 mg/kg, rat
ATE (dermal)	>2000 mg/kg, rat
ATE (inhalation)	No data available.

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenicity : May cause cancer.

Quartz (14808-60-7)	
IARC group	1
National Toxicity Program (NTP) Status	2

Reproductive toxicity : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Causes damage to lungs through prolonged or repeated exposure. (Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.)

Aspiration hazard : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitization by skin contact.

Symptoms/injuries after eye contact : Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : Harmful if swallowed. May cause stomach distress, nausea or vomiting.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological consideration when used according to directions. Normal dilution of this product to drains, sewers, septic systems and treatment plants is not considered environmentally harmful.

Calcium sulfate (7778-18-9)	
LC50 fishes 1	2980 mg/l (96 h: Lepomis macrochirus [static])
LC50 fish 2	> 1970 mg/l (96 h: Pimephales promelas [static])

Calcium oxide (1305-78-8)	
LC50 fishes 1	1070 mg/l (96 h: Cyprinus carpio [static])

Sodium carbonate (497-19-8)	
LC50 fishes 1	300 mg/l (96 h: Lepomis macrochirus [static])
EC50 Daphnia 1	265 mg/l (48 h: Daphnia magna)
LC50 fish 2	310 - 1220 mg/l (96 h: Pimephales promelas [static])

12.2. Persistence and degradability

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)	
Persistence and degradability	No data available.

12.3. Bioaccumulative potential

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)	
Bioaccumulative potential	No data available.

Calcium oxide (1305-78-8)	
BCF fish 1	(no bioaccumulation)

Calcium hydroxide (1305-62-0)	
BCF fish 1	(no bioaccumulation)

Sodium carbonate (497-19-8)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in soil

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)	
Ecology - soil	No data available.

12.5. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

In accordance with DOT.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Additional information

Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Quartz (14808-60-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cement, portland, chemicals (65997-15-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium sulfate (7778-18-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Limestone (1317-65-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium oxide (1305-78-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide (CaMg(OH)4) (39445-23-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cement, alumina, chemicals (65997-16-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide oxide (CaMg(OH)2O) (58398-71-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium hydroxide (1305-62-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium carbonate (497-19-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Aluminum sulfate (10043-01-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

Sakrete Fast Setting Cement Patcher; Sakrete Leak Stopper Hydraulic Cement (Gray)	
State or local regulations	This product contains Crystalline Silica, Quartz and may also contain trace amounts of other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC (I)	**International Agency for Research on Cancer.**
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP (N)	**National Toxicology Program.**
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

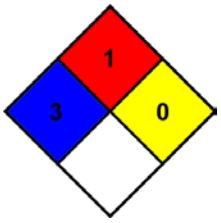
SECTION 16: Other information

Data sources : SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

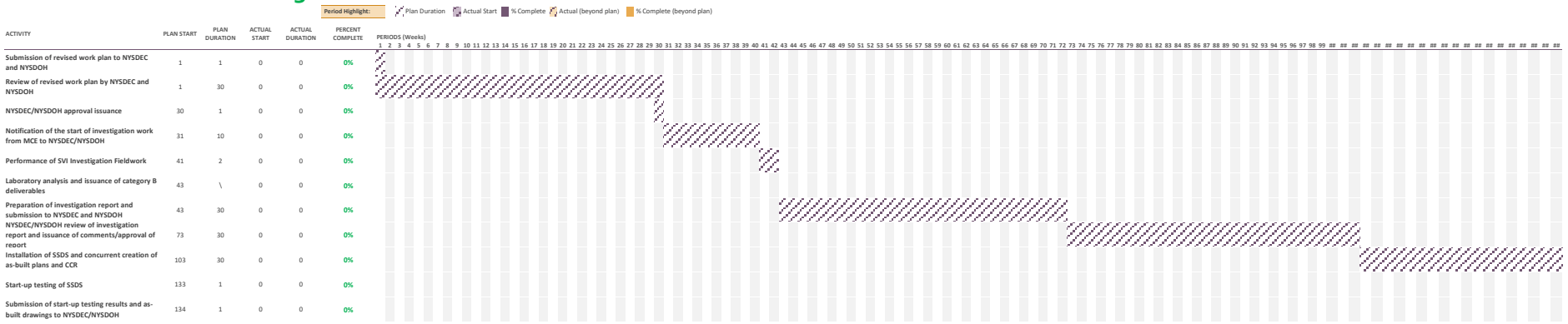


This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Attachment 3

Tentative Project Schedule

I.D.A. Cleaners SVI Investigation and SSDS Installation



Attachment 4

Data Validator's Resume

Lawrence F. Zeman

Project Scientist II

Lawrence has 20 years of environmental and lab consulting experience, taking on difficult laboratory issues and QA/QC. He is very well versed in areas as diverse as regulatory compliance, test protocol development and implementation, management of instrument repair and maintenance, field inspections and on-site audits, correlation studies of various analyses and engineering/technical reporting.

EDUCATION

B.A. Biology, Minor in Chemistry Queens College

LICENSES/ CERTIFICATIONS

New York State ELAP Laboratory Director

New York State ELAP Laboratory Microbiology Assistant Director

New York Department of Health Laboratory Technologist

OSHA HAZWOPER 40-hour & OSHA 10-hour Certified

SELECTED RELEVANT EXPERIENCE

Various Clients, New York

- Performed sample collection of various sample types at industrial facilities and construction & remediation project sites;
  Conducted soil sample collection, field activities oversight and continuous air monitoring for Community Air Monitoring Program (CAMP) in accordance with DER-10 as follows:
  - Elmhurst Tank Park & Playground, Queens, NY (2009 – 2011);
  - Calvert Vaux Park and Athletic Fields, Brooklyn, NY (2009 – 2011), as an Independent Environmental Monitor (IEM) on-site technician;
  - Harlem Rive Greenway, Bronx, NY (2011 – 2012);
  - Beach Channel H.S. Athletic Fields (2016);
  - P.S. 63M William McKinley School, Manhattan, NY (2016);
  - P.S. 131 Abigail Adams Public School, Queens, NY (2017);
  - Forest Hills High School, Queens, NY (2017)
- Developed and implemented new testing protocols and test procedures;
- Conducted instrumentation repair and scheduled maintenance;
- Conducted correlation studies of various analytic procedures;
- Verified laboratory Quality Assurance and Quality Control procedures and data;
- Responsible for regulatory compliance and quality control;
- Prepared and submitted facilities' annual Zoning Performance Standards Compliance Reports, including noise, vibration, odor and opacity testing for DSNY permit renewal;
- Provided environmental services to ensure compliance for facility's NYS DEC Title V Air Facility Permit. Completed monthly, semi-annual and annual compliance reports;
- Conducted field Inspections and on-site audits;
- Preformed field measurements and recording of Noise and Vibration;
- Prepared Engineering & Technical Reports;
- Prepared New York City Community Right-To-Know Law and SARA reports for Industrial facilities