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January 21, 2014

Ms. Karel Detterman
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 9502-6577

Subject: Monitoring Well Installation Workplan
Crow Canyon Dry Cleaners
7272 San Ramon Road Dublin, CA
RO# 000283

Dear Ms. Detterman:

This enclosed report has been prepared by Endpoint Consulting, Inc. on behalf of the Burrows Company, Dwight & Carleton Perry, Gabriel H. Chui & Lai H. Trust, the Lee Family, Nam Sun and Seung Hee Park, and the Raphel-Roessler Retail Group.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. If you have any questions, please contact Mr. Mehrdad Javaherian of Endpoint at 415-706-8935.

Sincerely,

James Roessler
Raphel-Roessler Retail Group

Endpoint.
Strategy. Science. Sustainability.

January 21, 2014

Ms. Karel Dettermen, P.G.
Alameda County Health Care Services Agency (County)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Vapor Monitoring Well Installation Workplan
Crow Canyon Dry Cleaners
7272 San Ramon Road, Dublin, California
(RO # 0002863)

Dear Ms. Dettermen:

Endpoint Consulting, Inc. (Endpoint) is pleased to present this brief letter workplan for installation of two additional vapor monitoring wells at the above referenced site. The purpose of these two wells is to supplement data from existing vapor monitoring well VM-10 (see Figure 1) in support of demonstrating the absence of potentially unacceptable offsite vapor intrusion impacts at the nearby Kildara residential complex located approximately 100 feet west of the site.

The need for these two wells was discussed in Endpoint's meeting with the County on November 21, 2013, and was specifically identified as the first of several tasks to be completed as part of a roadmap to potential closure of the site. Other tasks discussed in the meeting with the County and to be implemented after the monitoring well installation activities include:

- A round of vapor sampling from key vapor monitoring wells at the site, including the two proposed for installation herein, to be performed in February 2014. This would constitute an extra round of vapor sampling relative to what had been previously planned as the "final" semi-annual round of vapor sampling scheduled for the First Quarter of 2014; one year after termination of soil vapor extraction (SVE) activities implemented per the Corrective Action Plan (CAP) for the site. This extra round of sampling will help in providing additional data relative to establishing tetrachloroethelene (PCE) concentration trends over time; especially since termination of SVE operations in March 2013.
- A comprehensive round of sampling from all site-related vapor monitoring wells to be performed in the Second Quarter 2014, potentially marking the final round of vapor sampling at the site.
- Preparation of a comprehensive report which would document the results of well installation and above-referenced rounds of vapor sampling to be conducted in 2014. The report will include a detailed conceptual site model (CSM) consistent with the County's practices; an assessment of PCE concentration trends over time; screening of the PCE concentrations relative to the site-specific PCE soil vapor cleanup goal of 2,100 ug/m^3, corresponding to the current commercial/industrial shallow soil gas environmental

screening level (ESL) adopted by the San Francisco Bay Regional Water Quality Control board (Water Board); and the aforementioned analysis to confirm the absence of potential site-related vapor intrusion impacts to the nearby residential complex.

In concert with the above, this brief letter workplan outlines the proposed well installation activities, with Endpoint's standard operating procedures (SOPs) for vapor sampling in concert with the Department of Toxic Substances Control (DTSC) guidelines appended herein.

MONITORING WELL RATIONALE AND INSTALLATION ACTIVITIES

Figure 1 depicts the proposed location of the two additional vapor monitoring wells (VM-11 and VM-12) relative to the location of existing wells. As indicated, the two additional vapor monitoring wells are proposed along a north-south line parallel to the property, spaced approximately 30 feet apart and approximately in line with existing monitoring well VM-10. Combined, these three will serve to vapor monitoring locations in between the former PCE release area (i.e, area targeted by SVE operations), and offsite locations west of the site, including the nearest residential complex located approximately 100 feet west of the site.

Consistent with existing well VM-10, the two proposed wells will be placed on top of the ridge (approximately 4 feet above the ground surface elevation at the dry cleaner) separating the site from the offsite areas west of the site (see Figure 1). As such, the depth of the two proposed wells (i.e, 5 feet deep) will match that of existing well VM-10, with the depth of sampling coinciding with a depth of approximately 1 foot below grade at the dry cleaner facility. Figure 2 depicts the well construction details for VM-11 and VM-12, matching that of existing well VM-10.

Prior to initiation of drilling activities, a drilling permit will be obtained from the Zone 7 Water Agency. Also, a Health and Safety Plan (HASP) will be prepared, the drilling locations will be marked, and Underground Service Alert (USA) will be notified. Private utility clearance will also be conducted to ensure clearance of potential utilities at proposed well locations.

The new vapor wells will be advanced by Vironex, Inc. of Concord, California, a State Licensed Driller, under the supervision of Endpoint. The two wells will be completed using a hand auger to a depth of approximately five feet below grade. One-quarter inch teflon tubing with a implant vapor sampling tip will be placed in the hole to approximately three inches above the total depth (see Figure 2). The lowermost six inches of annular space will be filled with #2/16 sand. Approximately one foot of granular bentonite will be placed over the sand pack. Neat cement grout will be placed over the bentonite to the surface (see Figure 2). A five-inch well box will be placed over the sampling point at the surface.

Procedures for soil vapor sampling at the proposed wells will match those previously implemented at the site per the County's approval. Endpoint's vapor sampling SOPs updated for DTSC's 2012 guidelines are included as Attachment A herein.

SCHEDULE

Endpoint has initiated the permitting process for the two wells and plans to implement the proposed well installation activities on January 29th, 2014, given the County's commitment for a

prompt review of this workplan. This will be followed by two rounds of vapor sampling across the site during February and May, 2014. Technical reporting per the aforementioned details will follow in June 2014.

CLOSING

Endpoint greatly appreciates your assistance with this project, including your time to discuss a roadmap toward site closure in November 2013, and your commitment to an accelerated review of this workplan. If you have any questions, please contact Mehrdad Javaherian at 415-706-8935, or at mehrdad@endpoint-inc.com.

Sincerely,
Endpoint Consulting, Inc.

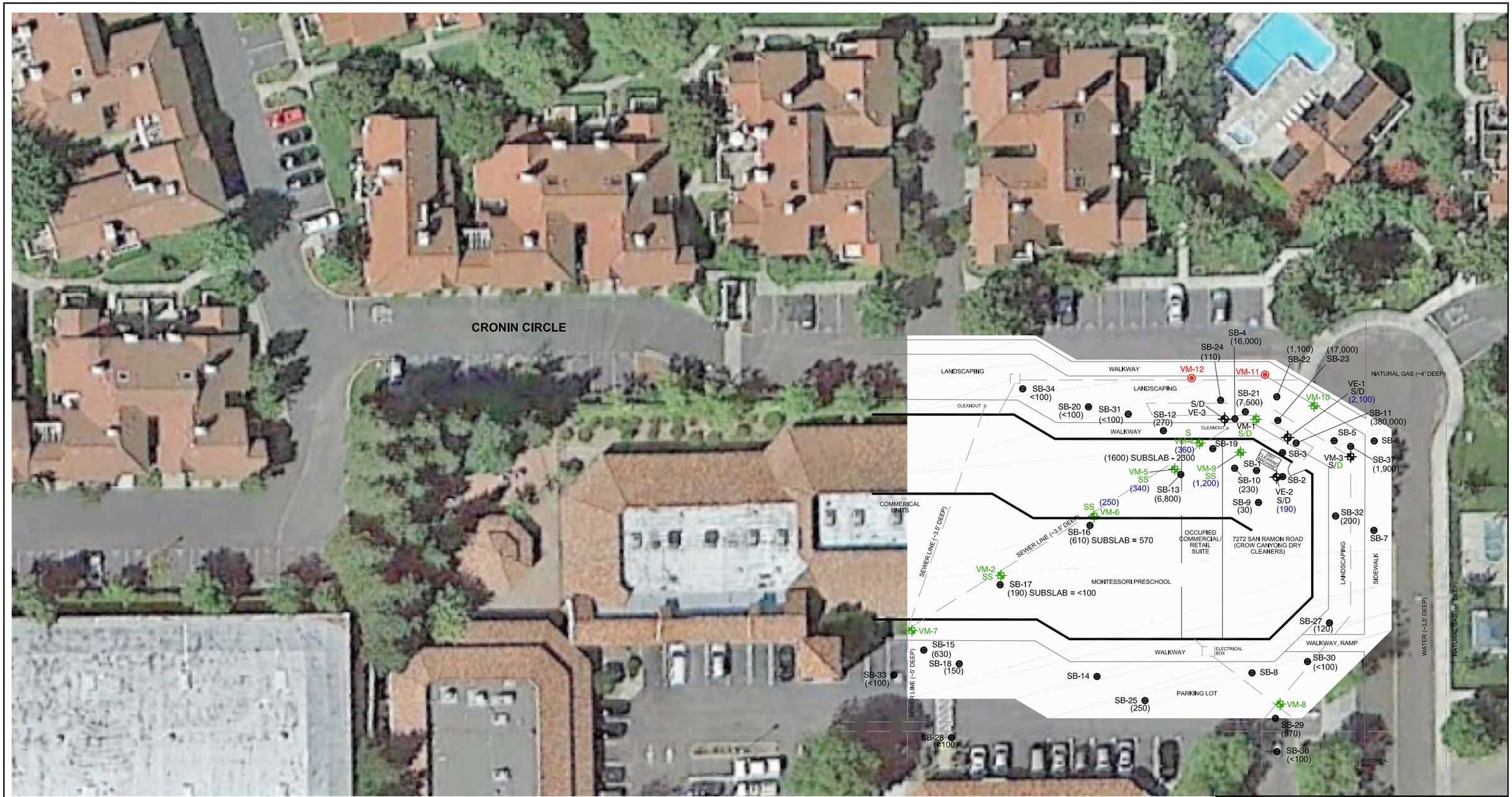
Mehrdad Javaherian, Ph.D., MPH, PE, LEED®GA
Program Manager

REGISTERED PROFESSIONAL ENGINEER
MEHRDAD MICHAEL JAVAHERIAN
C 77732
EXP. 6/30/15
CIVIL
STATE OF CALIFORNIA

Attachments:

Figure 1 - Proposed Vapor Monitoring Wells
Figure 2 - Vapor Well Construction Diagram

Attachment A – SOPs for Vapor Sampling



LEGEND:

VM-11	Proposed Vapor Monitoring Well
VM-4	Vapor Monitoring Well
VM-2SS	Sub-Slab Vapor Monitoring Well (2010)
VE-1	Soil Vapor Extraction Well Locations
SB-1	Historical Soil Vapor Boring Locations (2006- 2008))
S/D	Shallow Well Screen/Deep Well Screen
SS	Sub-Slab Well Screen
— —	Utility Line
(2,100)	PCE Concentration ($\mu g/m^3$) in soil vapor (August 2013)
(6,800)	PCE Concentration ($\mu g/m^3$) in soil vapor (2008)

N

0 20 40

Scale (feet)

Reference: Base map from drawing titled "PCE Concentrations in Soil Vapor", by Ceres, dated April 2008.

PROPOSED VAPOR MONITORING WELLS

CROW CANYON DRY CLEANERS
7272 SAN RAMON ROAD
DUBLIN, CALIFORNIA

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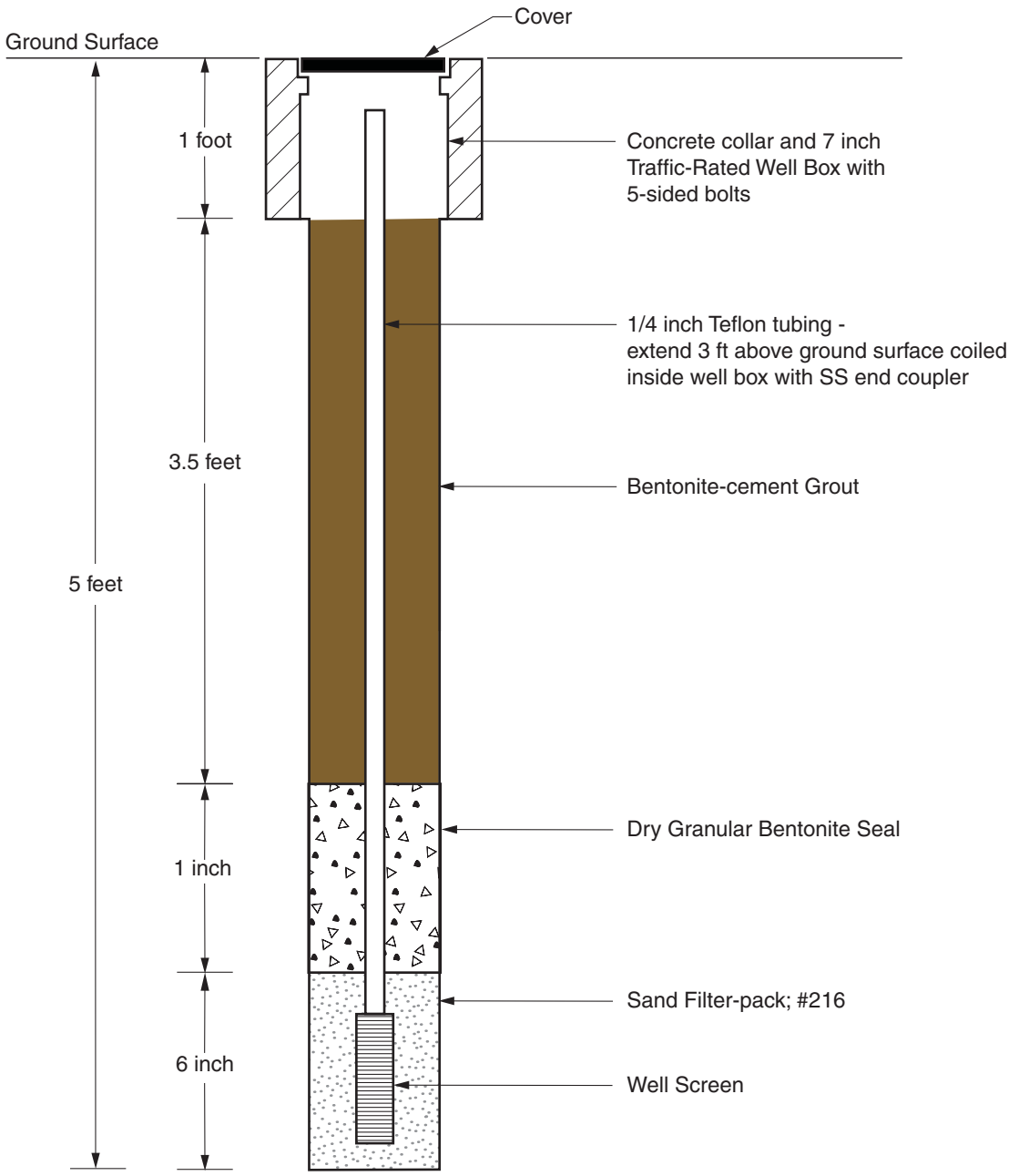
Date: 1/17/2014

Figure: 1



Not to scale

VAPOR WELL CONSTRUCTION DIAGRAM

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Date: 1/14/2014

Figure: **2**

ATTACHMENT A

Standard Protocols for Soil Vapor and Sub-Slab Vapor Sampling

SOIL VAPOR/SUB-SLAB SAMPLING PROCEDURES

Soil Vapor/Sub-Slab Sample Collection Protocol

To allow subsurface conditions to equilibrate, soil vapor and sub-slab sampling will be conducted at least 2 hours after probe installation at each soil vapor and sub-slab sample location. In accordance with the Department of Toxic Substances Control advisory (DTSC, 2012), purging and sampling rates will be limited to 100 to 200 milliliters (mls) per minute and a maximum vacuum of 100 inches of water column to limit stripping and prevent ambient air from diluting the samples.

Shut-in Test: Prior to soil-vapor/sub-slab purging or sampling, a shut-in test will be conducted to check for leaks in the sample train. The shut-in test will consist of assembling the above-ground apparatus (valves, lines, and fittings downstream of the top of the probe), and evacuating the lines to a measured vacuum of about 100 inches of water, then shutting the vacuum in with closed valves on opposite ends of the sample train. The vacuum gauge will then be observed for at least 1 minute, and if there is any observable loss of vacuum, the fittings will be adjusted as needed until the vacuum in the above-ground portion of the sample train does not noticeably dissipate. The vacuum gauge will be calibrated and sensitive enough to indicate a water pressure change of 0.5 inches.

Leak Testing: Helium tracer testing will be conducted to confirm absence of ambient air intrusion into the sample train at each soil vapor and sub-slab sampling location. A clear plastic container (shroud) will be inverted over the probe and the sample train and filled with about 10% to 30% helium by volume. Soil vapor/ sub-slab samples will be collected in a Tedlar bag and will be screened using a portable helium meter (MDG2002 or equivalent) to confirm absence of helium in the collected samples. Leak testing will be conducted during the purge volume testing noted below and also during the collection of the soil vapor/sub-slab samples to be collected following the purge testing.

A brief outline of a purge volume test to be conducted prior to soil vapor sampling (targeting determination of the purge volume to be used at each sample location) is presented below.

Purge Volume Test: To ensure stagnant or ambient air is removed from the sampling system and to assure samples collected are representative of subsurface conditions, a purge volume versus contaminant concentration test will be conducted as the first soil gas sampling activity at the selected purge test point. The purge volume test is conducted by collecting and analyzing a sample for target compounds after the removal of appropriate purge volumes.

Purge Test Locations: The purge test will be conducted at existing sub-slab vapor monitoring well VM-9SS, due to this well reporting the highest detected PCE concentrations in recent rounds of sampling.

Purge Volume: The purge volume or “dead space volume” can be estimated is based on the

internal volume of tubing used, and annular space around the probe tip. Step purge tests of one (1), three (3), and seven (7) purge volumes will be conducted as a means to determine the purge volume to be applied at all sampling points. The testing will be conducted using a tedlar bag in the field and the collected sample will be measured for total VOCs using a photo ionization detector (PID).

The appropriate purge volume will be selected based on the highest concentration for the VOCs detected during the step purge tests. If VOCs are not detected in any of the step purge tests, a default of three (3) purge volumes will be extracted prior to sampling at each soil vapor sample location.

Soil vapor and sub-slab samples will be collected following purging of the probe at the selected purge volume using a 1 liter summa canister. As noted above, sampling rates will be limited to 100 to 200 mL/minute flow rate and 100 inches of water column vacuum.

Field conditions, such as wet soil conditions, fine grained sediments, or barometric pressure changes may affect the ability and/or the quality of the collected soil vapor samples.

Wet Conditions: If no-flow or low-flow conditions are caused by wet soils, the soil vapor or sub-slab sampling will cease and commenced after the soils have sufficiently dried to allow sampling at the flow rates and vacuum noted above. In addition, no soil vapor sampling will be conducted within five days of a significant rain event (i.e, 0.5 inch or greater) or onsite watering event.

Low Permeable Soils Sampling: Under conditions where low permeable soils surround the soil vapor or sub-slab sampling probe thereby limiting the flow rate of soil vapor that can be drawn from the surrounding soils into the soil vapor probe, soil vapor will be withdrawn from the probe until such time that steady flow cannot be obtained by applying a vacuum of up to 100 inches water column, The sampling will then be discontinued to allow the vacuum to dissipate as soil vapor slowly enters the sandpack and probe tubing from the surrounding soils. Sampling will then continue until an adequate volume of sample has been collected in the 1 liter canister.

Baromertic Pressure Changes: To the extent practicable, soil vapor and sub-slab sampling will be conducted when the changes in barometric pressure are not significant during the course of the sampling. To this end, records of barometric pressures will be obtained from local sources during the duration of the soil vapor sampling. If changes in barometric pressure are such that its effect on data quality is measurable, such observations will be summarized in the technical report outlining the sampling activities.

A sample field form to be used to record data collected in the field is enclosed at the end of this attachment.

SAMPLING QUALITY CONTROL (QC) PROCEDURES

Quality assurance procedures will be implemented, generally adhering to those outlined in the DTSC (2012) advisory. A brief outline of the QC procedures to be followed is provided below.

Field QC Samples

Field Duplicate Samples: A field duplicate is an environmental sample from a single source that is divided in the field into two separate aliquots. The aliquots are submitted "blind" to the laboratory, and are processed as separate samples. Field duplicate samples will be collected for all analyses at the minimum rate of 1 sample for every 10 soil vapor samples collected during each round of monitoring.

FIELD FORM FOR SOIL VAPOR/SUB SLAB SAMPLING

Project Name:_____
Date: _____ Project Number: _____
Site Location: _____
Weather: _____
Field Personnel: _____
Recorded by: _____

Soil Vapor Probe No: _____
Sub Slab Probe No: _____
PID Serial No: _____ PID Lamp: _____ eV
MDG 2002 Serial No: _____
Tracer Gas: _____

Surface Type: Asphalt _____ Concrete _____ Grass _____ Other _____
Surface Thickness (i.e., asphalt or concrete) _____

1 Casing Volume:
Sub Slab Volume _____ L
Soil Vapor Probe Volume _____ L

Initial Vacuum Prior to Pumping _____ inches of water
Shut-in Test _____ inches of Water held for _____ seconds
Field Tubing: Blank PID Reading _____ ppmv
Shut in Test Completed Prior to Purging: _____ Yes _____ No

Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	Tracer Gas		Sample (ppmv, %)	VOCs by PID (ppmv)
							Shroud (%)			
							Min	Max		

Helium Concentration in Field Screen Samples is Less than 5% of Minimum Concentration in the Shroud?

_____ **Yes** _____ **No**

Sample Collection

Date	Time	Sample ID		Summa Canister ID	Flow Controller #	Vaccum Gage #	Initial Vacuum (in of Hg)	Final Vacuum (in Hg)