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February 11, 2009

Mr. Steven Plunkett,
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Letter Addendum to the 9 June 2008 Terra Vac Soil Vapor Extraction Pilot Test Work Plan, Crow Canyon Cleaners Site, 7272 San Ramon Road, Dublin, California

Dear Mr. Plunkett,

Endpoint Consulting, Inc. (Endpoint) has prepared this letter addendum (addendum) to the 9 June 2008 Terra Vac Soil Vapor Extraction (SVE) Pilot Test Work Plan (Work Plan) for the Crow Canyon Cleaners Site (the "Site"; see Figure 1 for Site Vicinity Map and Figure 2 for Site Plan), located at 7272 San Ramon Road in Dublin, California 94568.

This addendum addresses the 23 January 2009 Alameda County Health Care Service Agency (ACHCSA) comments to the Work Plan.

Specifically, the ACHCSA had three comments on the SVE Pilot Test Work Plan:

1. SVE Pilot Test:
   The ACEH requested specific design details regarding the basis for configuration of the SVE and vapor monitoring wells (VMWs), monitoring procedures during the SVE pilot test, clarifications on sampling protocols to be followed, standard to be used for calibrating the photo ionization detector (PID), and the basis for termination of the long term SVE pilot test.

2. SVE and Monitoring Well Installation:
   The ACEH requested multiple screen intervals for SVE and monitoring wells that target the distinct lithologic units at the Site.

3. Public Participation:
   The ACEH requested the implementation of a public participation program for the Site.

This addendum provides a response to the comments noted above. Additional details are also provided as required for clarifications to the proposed activities.

1.0 SVE PILOT TEST

SVE and VMW Configuration: A preliminary subsurface investigation was conducted at the Site by AEI Consultants in January 2005, followed by additional investigations conducted by

Ceres Associates in 2006[1] (see Figure 2 for locations of soil borings and reported chemical analytical data).

In the June 2008 SVE Pilot Test Work Plan, Terra Vac recommended installation of three SVE wells (VE-1 through 3) and one VMW (VM-1) for the pilot testing. Pursuant to the request of the ACHCSA, additional monitoring wells will be installed to obtain a representative assessment of the radius of influence (ROI) of SVE wells at the Site. Further, the wells will be nested to provide data from the distinct lithologic units observed at the Site (see below for details).

VM-1 as proposed by Terra Vac is to be installed at an approximate radial distance of 20 feet from both VE-1 and VE-3. Geographically, it will be located to the southwest of VE-1 and to the northwest of VE-3.

In addition to well VM-1, installation of two additional vapor monitoring wells, VM-2 and VM-3, is proposed herein for monitoring the response in the subsurface to vacuum extraction from VE-1 and VE-3. Proposed vapor monitoring well VM-2 will be installed to the south of VE-3 at a distance of approximately 10 feet, while well VM-3 will be installed 20 feet to the north of VE-3 (see Figure 3). VM-3 will also provide monitoring data during extraction from well VE-2, as it will be located approximately 30 feet to the northwest of VE-3 and inside the dry cleaner (see Figure 3).

The configuration of SVEs and VMWs, located 10 to 30 feet radially outward from the SVE wells, is considered sufficient to provide data necessary to estimate the ROI of the SVE wells. The radial distance from an extraction well at which a vacuum of 0.1 inches of water column is observed/extrapolated will be identified as the ROI of the extraction well. ROIs will be estimated for each step vacuum test to be conducted at the Site.

Monitoring Procedures: Sections 5.1.1 and 5.1.2 of the June 2008 Work Plan present the monitoring procedures to be followed during the pilot testing. Modifications to these procedures, where necessary, are outlined below.

The general monitoring parameters and frequency for VEs, VMWs, vapor extraction unit (VEU), and other parameters are summarized in Tables 1 through 3 below. Adjustments to the following program may be made during pilot testing activities based on conditions encountered in the field.

[1] Soil Vapor Extraction and Pilot Test Work Plan, Crow Canyon Cleaners, Dublin, California, Terra Vac. 9 June 2008

Table 1: SVE Well Monitoring Parameters and Frequency, Short-Term SVE Pilot Test

Step Vacuum Tests Each Extraction Well Screen[1] - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Soil Vapor Purge Test[2]	1 liter Summa Canister	Sample to be collected following 1, 3, and 7 casing volumes purged. Sample to be collected at VE-1 located adjacent to boring SB-11, which reported the historical high tetrachloroethylene (PCE) concentration in soil vapor.
Groundwater Level Measurement[3]	Field Reading	Prior to initiation of each step vacuum test
Well Casing Vacuum	Vacuum gauge at wellhead	At 5-minute intervals during each step.
Soil Vapor Sample by Toxic Organics (TO)-14	1 liter Summa Canister	Prior to initiation of the first step vacuum test and toward the end of the last step vacuum test.
Well Vapor Flow Rate	Thermal Anemometer at wellhead	At 5-minute intervals during each step.
Screening Soil Vapor Sampling	Tedlar Bag and PID	At 15-minute intervals during each step.

Note:
1) Measurements will be collected at each well screen, except for the purge sampling noted in well VE-1 (2 screens per well; see section below for well construction details).
2) Soil vapor purge test samples will be collected following 3,5, and 7 casing volumes purged from each of the two well screens to be installed at VE-1.
3) Groundwater Level Measurement only to be conducted in the bottom well screen of each well.

Table 2: Vapor Monitoring Well Monitoring Parameters and Frequency, Short-Term SVE Pilot Test

Step Vacuum Tests[1] Each Monitoring Well Screen - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Groundwater Level Measurement[2]	Field Reading	Prior to initiation of each step vacuum test
Well Casing Vacuum	Vacuum gauge at wellhead	At 5-minute intervals during each step.

Note:
1) Measurements will be collected at each well screen (2 screens per well; see section below for well construction details).
2) Groundwater Level Measurement only to be conducted in the bottom well screen of each well.

Table 3: VEU Monitoring Parameters and Frequency, Short-Term SVE Pilot Test

Step Vacuum Tests VEU - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Vacuum at unit.	Magnahelic gauge on unit	At 10-minute intervals during each step.
Extracted vapor flow rate.	Measured after water knockout with Thermal Anemometer	At 10-minute intervals during each step
Extracted liquid flow rate.	Measured periodically by totalizing water meters at effluent of the knockout transfer pump.	At end of each step.
Soil Vapor Sample by TO-14	1 liter Summa Canister	Prior to initiation of the first step vacuum test and toward the end of the last step vacuum test
Screening Soil Vapor Sampling	Tedlar Bag and PID	At 15-minute intervals during each step.

Sampling Protocols: The soil vapor sampling for laboratory analytical testing will be conducted in accordance with the Department of Toxic Substances Control (DTSC) advisory for active soil gas investigations[2]. The samples will be collected in a summa canister following well purging.

Purge Test

The purge volume to be used prior to sample collection will be based on a purge test to be conducted at VE-1 located adjacent to boring SB-11, which has reported the Site maximum PCE soil vapor concentration of 380,000 micrograms per cubic meter (ug/m^3). Step purge tests of 1, 3, and 7 casing volumes from each well screen at VE-1 will be conducted followed by sampling with a summa canister after each purge test. For each well screen at VE-1, the purge volume from the purge test that results in the highest PCE concentration by TO-14 will be selected as the purge volume for sampling during the pilot testing

Soil Vapor Sample Collection

Per Table 1, soil vapor samples will be collected from each well screen within VE-1, VE-2, and VE-3 during the SVE pilot testing activities. Samples will be collected at a flow rate of 100 to 200 milliliters per minute (ml/minute).

[2] Advisory Active Soil Gas Investigations, DTSC. January 28, 2003.

Leak tests will be conducted before and after the first purge test noted above to be conducted at VE-1, and also before and after the first sample to be collected during the

short-term pilot test at each of the three extraction wells, VE-1, VE-2, and VE-3. Leak testing will be conducted by spraying shaving cream adjacent to each sample location and collecting a soil vapor sample and testing for isobutene in the laboratory.

Calibration of PID: 100 parts per million by volume (ppmv) of isobutylene span gas will be used to calibrate the PID to be used for the screening soil vapor sampling to be conducted during the pilot testing activities.

Long-Term SVE Pilot Testing: Following completion of the short-term test, long-term SVE pilot testing will be conducted by extracting vapor from VE-1, VE-2, and VE-3. The vapor flow rates and the vacuum extracted from the vapor extraction wells will be optimized to maximize the vacuum response in the nearby monitoring wells, VM-1, VM-2, VM-3, and VM-4. This testing will continue until the reported PCE concentrations at the vapor extraction wells reach asymptotic conditions up to a maximum 3-month period following initiation of the long-term test. Further, additional permits, as required, will be obtained to discharge water and treated air from the VEU unit.

Monitoring and sampling will be conducted on a weekly basis as summarized in Tables 4 through 6.

Table 4: SVE Well Monitoring Parameters and Frequency, Long-Term SVE Pilot Test

Step Vacuum Tests [1] Each Extraction Well Screen[1] - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Groundwater Level Measurement[2]	Field Reading	Weekly
Well Casing Vacuum	Vacuum gauge at wellhead	Weekly
Soil Vapor Sample by Toxic Organics (TO)-14	1 liter Summa Canister	Monthly
Well Vapor Flow Rate	Thermal Anemometer at wellhead	Weekly
Screening Soil Vapor Sampling	Tedlar Bag and PID	Weekly

Note:
1) Measurements will be collected at each well screen, except for the purge sampling noted in well V-1 (2 screens per well; see section below for well construction details).
2) Groundwater Level Measurement only to be conducted in the bottom well screen of each well.

Table 5: Vapor Monitoring Well Monitoring Parameters and Frequency, Long-Term SVE Pilot Test

Step Vacuum Tests [1] Each Monitoring Well Screen - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Groundwater Level Measurement[2]	Field Reading	Weekly
Well Casing Vacuum	Field Reading	Weekly

Note:
1) Measurements will be collected at each well screens (2 screens per well; see section below for well construction details).
2) Groundwater Level Measurement only to be conducted in the bottom well screen of each well.

Table 6: VEU Monitoring Parameters and Frequency, Long-Term SVE Pilot Test

Step Vacuum Tests VEU - Monitoring Parameters and Frequency		
Parameter	**Monitoring Method**	**Monitoring Frequency and Notes**
Vacuum at unit.	Magnahelic gauge on unit	Weekly
Extracted vapor flow rate.	Measured after water knockout with Thermal Anemometer	Weekly
Extracted liquid flow rate.	Measured periodically by totalizing water meters at effluent of the knockout transfer pump.	Weekly
Soil Vapor Sample by TO-14 (Influent and Effluent of the VEU Unit)	1 liter Summa Canister	Monthly
Screening Soil Vapor Sampling (Influent and Effluent of the VEU Unit)	Tedlar Bag and PID	Weekly

2.0 SVE AND MONITORING WELL INSTALLATION

Based on a review of the boring logs contained in an AEI Site Investigation Report[3], there are two distinct lithologic units, silty clay and sandy clay, in the vadose zone. The silty clay unit extends to a depth of approximately 5 feet below ground surface (bgs) and

the sandy clay unit extends from approximately 5 feet to 10 feet bgs. The sandy clay overlies a 2-foot thick water-bearing sandy gravel unit, which in turn overlies a sandy clay.

To isolate the two distinct lithologic units in the vadose zone, each VE well and VMW will have two nested well screens. The first well screen will isolate the silty clay unit and will be screened from approximately 2.5 to 5.5 feet bgs, with the filter pack from 2 to 6 feet bgs. The second well screen will extend from 7.5 feet bgs to 11.5 feet bgs, with the filter pack from 7 to 12 feet bgs (i.e., will be screened below the water table to recover groundwater to the extent practicable). The two well screens will be separated by a 2- foot long bentonite plug. Each well screen will have a casing diameter of 2 inches. A typical well construction diagram is presented on Figure 4. If tight access does not provide the ability to install nested wells, then the two well screens at each VE and VMW well location will be installed in separate borings. However, the intervals of the filter pack, well screen, and bentonite seals will correspond to those noted above and also presented in Figure 4.

3.0 PUBLIC PARTICIPATION

Per the ACHCSA's request, a public participation program will be implemented at the Site. A public participation distribution list will be submitted by 20 February 2009 to the ACHCSA. Once the SVE pilot test is completed, the public fact sheet will be updated with the results of the pilot test.

[3] Site Investigation Report, AEI Consultants, April 14, 2006

CLOSING

Endpoint appreciates your assistance on this project. We will implement the workplan addendum activities, beginning with the well installation, upon approval by the ACHCSA. In the meantime, should you have any questions, please feel free to contact Mr. Ram Rao at 510-414-9315 or at ram@endpiont-inc.com.

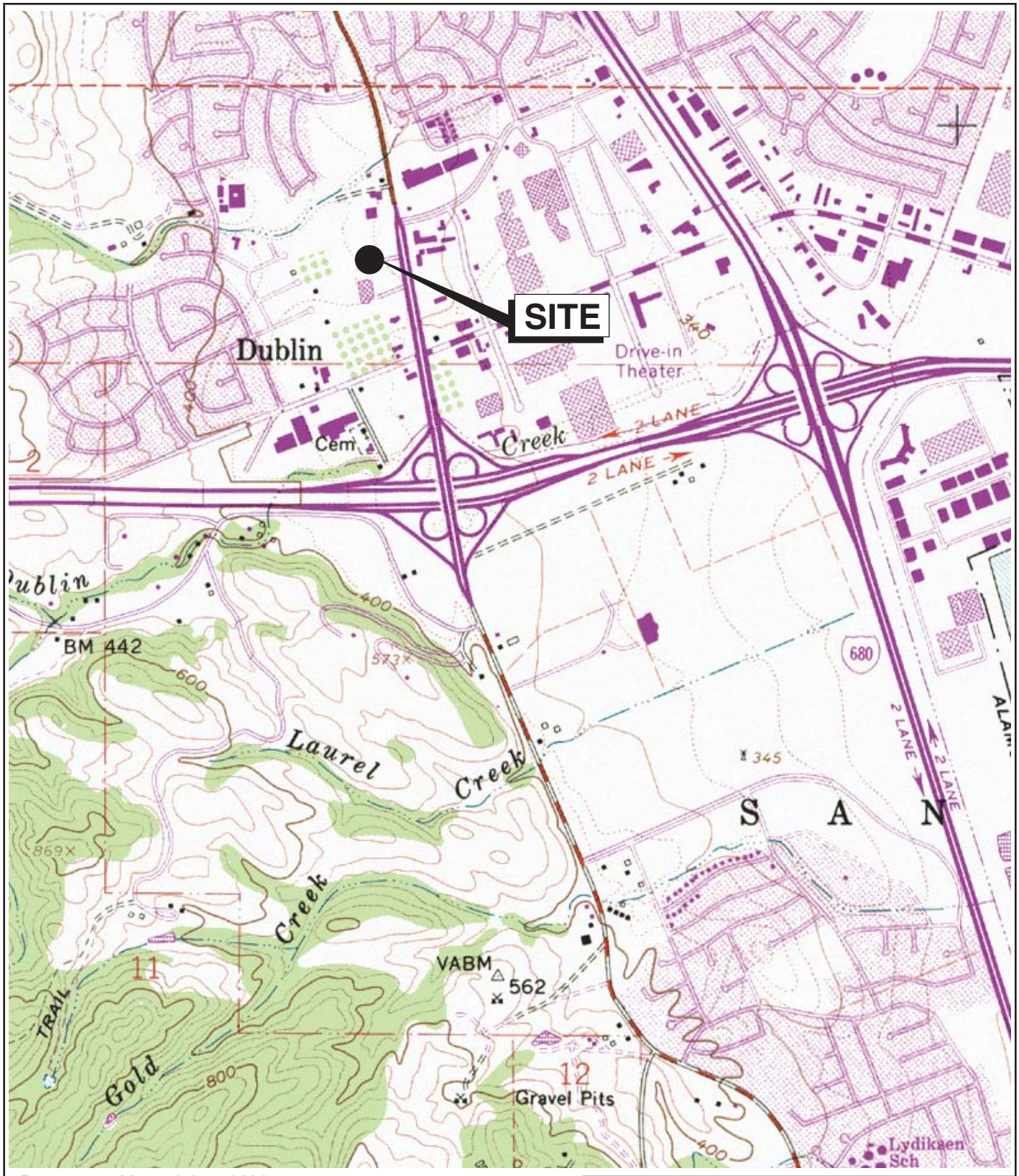
Sincerely,

Endpoint Consulting, Inc.

Ram Rao, PE
Principal Engineer

Cc: Nick Patz, Ceres Associates

Figures:
Figure 1: Site Vicinity Map
Figure 2: Site Plan
Figure 3: Layout of Vapor Extraction and Vapor Monitoring Wells
Figure 4: Typical Well Diagram



Base map: Maptech Inc., 2001

N

0 1/4 1/2

Scale (Miles)

SITE VICINITY MAP

CROW CANYON DRY CLEANERS
7272 SAN RAMON ROAD
DUBLIN, CALIFORNIA

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Figure: 1

LANDSCAPING
WALKWAY
LANDSCAPING
NATURAL GAS (~4' DEEP)
SB-34 <100)
CLEANOUT
SB-20 (<100)
SB-31 (<100)
SB-24 (110)
SB-22 (1100)
SB-21 (7500)
SB-23 (17000)
VM-2
VM-1
SB-4 (16000)
CLEANOUT
SB-12 (270)
WALKWAY
LANDSCAPING
SB-11 (380,000)
SB-5
SB-6
SB-37 (1900)
SB-19 (1600) SUBSLAB - 2300
DRY CLEARING MACHINE
SB-3
SB-1
SB-10 (230)
SB-2
VM-3
SB-13 (6800)
COMMERICAL UNITS
SB-9 (30)
SB-32 (200)
SB-7
SEWER LINE (~3.5' DEEP)
SEWER LINE (~3.5' DEEP)
SB-16 (610) SUBSLAB = 570
7272 SAN RAMON ROAD (CROW CANYONG DRY CLEANERS)
LANDSCAPING
SIDEWALK
SB-17 (190) SUBSLAB = <100
MONTESSORI PRESCHOOL
SB-27 (120)
WALKWAY, RAMP
WATER (~3.5' DEEP)
NATURAL GAS (~4' DEEP)
SB-15 (630)
SB-18 (150)
SB-33 (<100)
SEWER LINE (~5' DEEP)
WALKWAY
ELECTRICAL BOX
SB-30 (<100)
SB-14
SB-8
PARKING LOT
SB-25 (250)
SB-29 (570)
SB-28 (<100)
SB-36 (<100)
ELECTRICAL BOX

LEGEND:

- SB-16 — Soil Boring by Ceres Assocates, March 2008 (PCE Concentration ug/m^3)
- SB-4 — Soil Boring Locations, February 2006 (PCE Concentration ug/m^3)
- SB-1 — Soil Boring Locations, January 2005
- SB-11 — Soil Boring Locations, December 2006 and January 2007
- VM-1 — Vapor Monitoring Well
- Utility line

Concentrations in red exceed residential environmental screening level (ESL) of 410ug/m^3 for PCE

N

0 10 20

Scale (feet)

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

PCE CONCENTRATIONS IN SOIL VAPOR

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Figure: 2

LEGEND:

- VE-1 — Proposed Soil Vapor Extraction Well Locations
- SB-16 — Soil Boring by Ceres Assocates, March 2008 (PCE Concentration ug/m^3)
- SB-4 — Soil Boring Locations, February 2006 (PCE Concentration ug/m^3)
- SB-1 — Soil Boring Locations, January 2005
- SB-11 — Soil Boring Locations, December 2006 and January 2007
- VM-1 — Vapor Monitoring Well
- Utility line

Concentrations in red exceed residential environmental screening level (ESL) of 410ug/m^3 for PCE

LANDSCAPING
WALKWAY
LANDSCAPING
NATURAL GAS (~4' DEEP)
SB-34 <100)
CLEANOUT
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SB-24 (110)
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VM-2
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SB-12 (270)
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SB-37 (1900)
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DRY CLEARING MACHINE
SB-3
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VE-2
SB-10 (230)
SB-2
VM-3
SB-13 (6800)
COMMERICAL UNITS
SB-9 (30)
SB-32 (200)
SB-7
SEWER LINE (~3.5' DEEP)
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SB-33 (<100)
SB-14
SB-8
SEWER LINE (~5' DEEP)
PARKING LOT
SB-25 (250)
SB-29 (570)
SB-28 (<100)
SB-36 (<100)
ELECTRICAL BOX

N

0 10 20
Scale (feet)

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

PROPOSED VAPOR EXTRACTION AND WELL LOCATIONS

CROW CANYON DRY CLEANERS
7272 SAN RAMON ROAD
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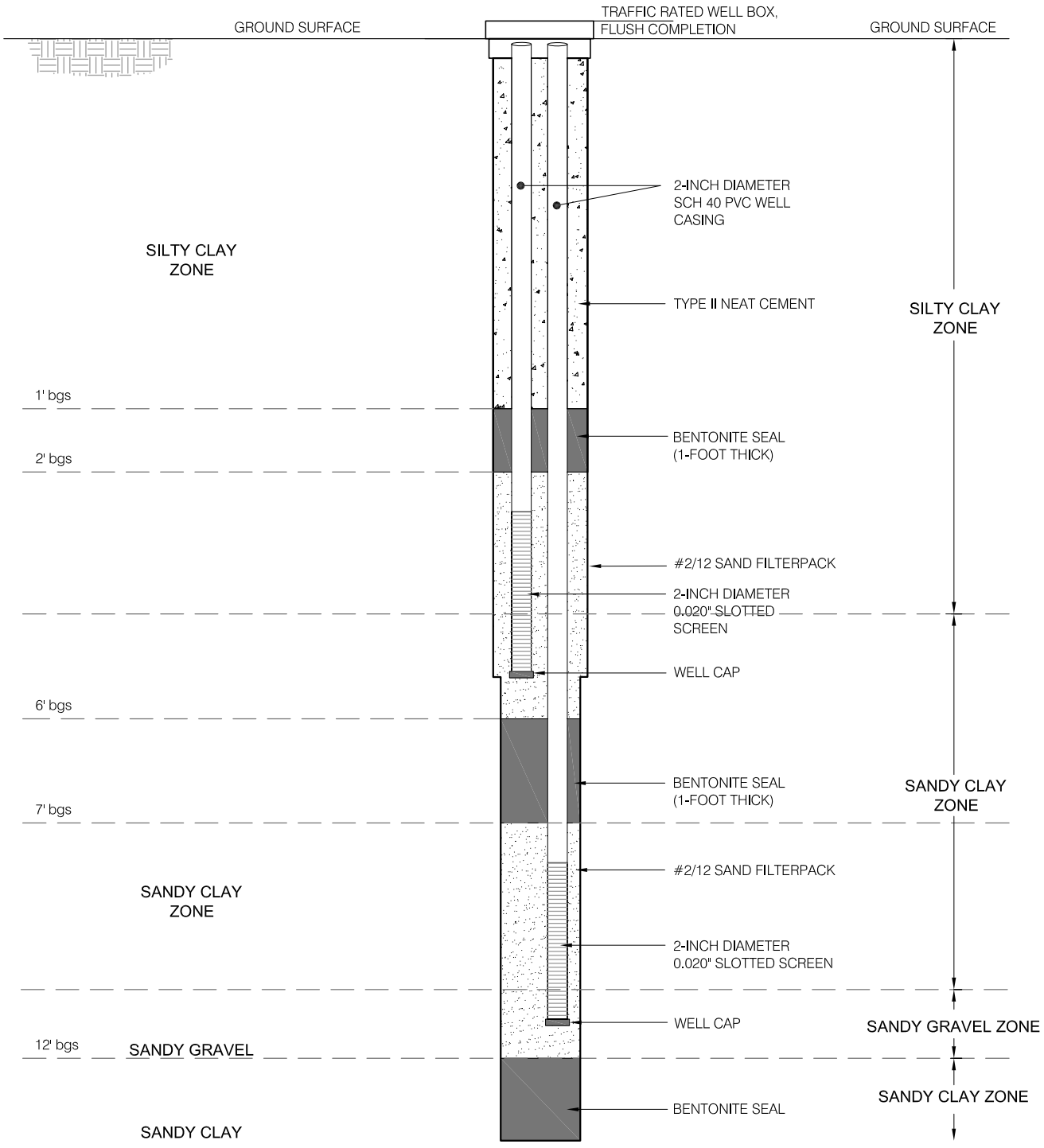
Figure: 3



Not to scale

TYPICAL WELL DIAGRAM

CROW CANYON DRY CLEANERS
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Figure: 4

Note:
The depth of the specific screen intervals will be determined in the field based on the lithology observed.