TERRAMAR
RETAIL CENTERS

August 31, 2015
P:\PROJECTS\Terramar\Oakland\5100 Broadway\Work Plan - Dry Cleaner Location\Addendum WP\Addendum Work Plan - Perjury Statement Cover.doc

Mr. Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RE: ADDENDUM - WORK PLAN FOR ADDITIONAL SITE CHARACTERIZATION
FORMER ROCKRIDGE CLEANERS
5100 BROADWAY, OAKLAND, CALIFORNIA
RO# 0003172
TETRA TECH PROJECT NO. 117-7429001

Dear Mr. Detterman:

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.

Sincerely,
Terramar Retail Centers

Rick Henderson
Vice President Construction & Design

TETRA TECH

August 31, 2015
P:\PROJECTS\Terramar\Oakland\5100 Broadway\Work Plan - Dry Cleaner Location\Work Plan.doc

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RE: ADDENDUM - WORK PLAN FOR ADDITIONAL SITE CHARACTERIZATION
FORMER ROCKRIDGE CLEANERS
5100 BROADWAY, OAKLAND, CALIFORNIA
RO# 0003172
TETRA TECH PROJECT NO. 117-7429001

Dear Mr. Detterman:

This letter presents a work plan addendum to Tetra Tech's June 18, 2015 work plan for additional site characterization in connection with the former Rockridge Cleaners located at 5100 (5114 tenant space) Broadway in Oakland, California. This work plan addendum was prepared based on discussions during the August 28, 2015 conference call meeting between the Alameda County Environmental Health Department (ACEHD), Terramar Retail Centers (Terramar), and Terramar's consultant Tetra Tech, Inc. (Tetra Tech), during which the results of the recent soil (7/30/15) and soil gas (8/4/15) sampling were discussed.

The former Rockridge Cleaners was located in "Building 5" of the six building Rockridge Shopping Center (Figure 1), which is slated for two phases of demolition and construction, resulting in the new "Shops at the Ridge" redevelopment (Figure 2). Phase I is currently underway, with Buildings 5 and 6 having been recently demolished. Buildings 5 and 6 generally will be replaced by contiguous Building K and Building A, respectively, along with stand-alone Building C and Building D. Buildings A and D are currently under construction.

Prior investigations (2001 and 2014) of the dry cleaner site by Tetra Tech detected relatively low PCE concentrations in soil in the vicinity of the dry cleaner, and no detected PCE in two grab groundwater samples (in front of the dry cleaner space). PCE was detected at a relatively low concentration beneath the dry cleaner in a sub-slab soil gas sample collected in 2014, with relatively elevated soil gas concentrations detected at two locations (less than 5 feet) along the sanitary sewer line behind the dry cleaner. A 2014 soil sample from 1.5-feet in depth beneath the dry cleaner slab did not contain PCE or

related compounds.

The most recent soil and soil gas sampling, conducted by Tetra Tech in July/August 2015, revealed elevated concentrations of PCE and breakdown products in shallow soil gas, especially directly behind the former dry cleaner tenant space (rear door area), with elevated soil gas concentrations detected beneath the former dry cleaner space and adjacent former tenant space to the north. PCE was detected in soil sample from most of the soil borings in low concentrations; only one boring DC-SB-10, completed behind the dry cleaner, contained PCE in soil at concentrations (up to 2,700 micrograms per kilogram, or µg/Kg) above the commercial ESL value. The most recent sampling event focused on shallow soil (1- and 5-foot samples) and soil gas (5-feet), as prior data indicated a minor release, likely related to a PCE release to the sewer line. Groundwater samples were not part of the most recent scope of work. The recent soil and soil gas data are presented in Table 1 and Table 2, respectively, with the data plotted on Figure 5.

Based on recent Site Management Plan (SMP) observations by Tetra Tech, during Building 5 demolition (Figure 3), it was discovered that the rear 15-feet of the 5114 tenant space (former dry cleaner) was actually the bathroom/server room for the adjacent 5112 tenant space to the north (the former credit union). This feature was not obvious during Tetra Tech's tenant space walk through for the June 18, 2015 work plan. The slab elevation of the 5112 tenant space was approximately 14-inches higher than the 5114 tenant space. A raised slab was constructed atop the 5114 slab, covering a 12" x 12" floor drain original to 5114, when the 5112 footprint expanded into the 5114 space. As such, the 2014 soil and sub-slab soil gas sample locations were actually located 15 feet farther to the southeast than previously presented.

The 5112 and 5114 tenant spaces also appear to have been a shared space at one time, as evidenced by concrete step-up from 5114 to 5112, discovered under the raised slab. The dry cleaner layout has been updated to reflect actual conditions (Figure 4). The demolition observations are presented in the attached photo log.

The purpose of this work plan addendum is to collect additional data to reasonably characterize the nature and extent of the PCE release in soil and soil vapor, both laterally and vertically, to support subsequent source area removal, and facilitate construction of Building K without implementing a long-term soil vapor extraction or sub-slab depressurization system for maintaining future indoor air quality. Terramar's preference is to perform "source" removal via soil excavation if possible. Although groundwater has generally been absent in the area behind the former dry cleaner, groundwater samples are proposed as part of this expanded scope of work. It is understood that PCE

detections in groundwater, depending on concentration, could ultimately require a form of active remediation, regardless of source area (soil) removal. Based on the lack of PCE in two groundwater samples collected in front of the former dry cleaner, significant groundwater PCE detections are not anticipated.

SCOPE OF WORK

A total of 12 combination soil/soil vapor/groundwater sample borings will be advanced to approximately 25 feet below ground surface. The locations of the borings are shown on the attached Figure 6. The borings are intended to provide deeper soil sample and soil vapor data at the most recent sample points with elevated soil and/or soil vapor detections, in addition to providing lateral definition of the PCE release. As previously indicated, groundwater will be sampled if encountered. Groundwater was previously encountered at approximately 22 feet in depth in the two borings completed in front of the dry cleaner tenant space.

Pre-Field Tasks and Permitting

Pre-field tasks will include visiting the site to mark boring locations, modifying the existing site-specific Health and Safety Plan, obtaining the boring permit, hiring subcontractors and acquiring field equipment. Underground Service Alert (Dig Alert) will also be notified at least 48 hours prior to drilling.

An Alameda County Water District (ACWD) permit is required for completing the borings; the permit will be obtained prior to the field work. The permitting process typically requires between 5 and 10 business days to complete, but ACWD can generally expedite the process if personnel are available to review the permit and perform the grout inspection.

Soil Sampling

The 12 borings will be advanced to 25 feet below grade using a hollow-stem auger drill rig, with small diameter augers. This sampling approach is different from the direct push technology used to implement the June 18, 2015 work plan. Drilling deeper than 12-15 feet below grade has been difficult in the past with direct push technology at this site, due to the presence of dense coarse gravel and cobbles. If possible, soil will be continuously cored, using a core barrel lined with brass sample sleeves, and the soil screened using a MiniRAE 3000 PID. No elevated PID readings were detected at recent boring DC-SB-10 (or any of the recent borings), where up to 2,700 µg/Kg PCE was detected in soil. Reusable sampling equipment will be decontaminated between samples using a liquinox

and water solution, and rinsed with clean water.

Groundwater has been encountered at approximately 22 feet below grade at two borings in the past, but is generally absent in this area.
Soil samples will be collected from each boring at 10-, 15- and 20-feet in depth, and submitted to the laboratory for analysis of volatile organic compounds (VOCs) using EPA Method 8260B, to supplement the 1- and 5-foot soil sample data. Shallow (1- and 5-foot) soil samples will not be collected from these additional borings.

The soil samples will be analyzed at California Laboratory Services (CLS) in Rancho Cordova, California using an expedited 2-day laboratory turn-around time.

Groundwater Sampling

After soil sample collection is complete at each location, an attempt will be made to collect a groundwater. If groundwater is not present at 25 feet in depth, the soil boring will be advanced an additional 5-feet (30 feet total) in an attempt to encounter groundwater. Groundwater samples will be collected by inserting 1-inch PVC blank casing, fitting with a 5-foot section of PVC well screen, to the bottom of the soil boring. The PVC well string will be inserted through the augers, keeping overlying soil from potentially falling into the water. New small-diameter polyethylene tubing will be inserted down the PVC well string, and fitted to a peristaltic pump for sample retrieval. Each groundwater sample will be pumped through a new 0.45-micron pleated barrel filter, and placed in containers appropriate for the selected analyses.

The groundwater samples will be submitted for analysis of VOCs using EPA Method 8260B. The groundwater samples will be analyzed at CLS in Rancho Cordova, California using an expedited 3-day laboratory turn-around time.

Temporary Vapor Monitoring Points

Following groundwater sampling, each soil boring will be partially back-grouted to 16 feet below grade using neat cement topped with granular bentonite to approximately 15 feet below grade, and each boring will be converted into a dual-completion temporary vapor monitoring point (VMP). VMP screens will be installed at 5- and 15-feet below grade in each boring. The VMPs will consist of a ½" diameter by 3-inch long stainless steel mesh probe screen, fitted to ¼" diameter stainless steel tubing to the surface. A brass ball valve and tubing barb will be fitted to the top of each VMP at the time of sampling. All VMP components will be compression-fit together to form a leak-tight assembly from the

probe screen to the surface. The probe screens will be set in 1-foot of #2/12 sand (15 to 14 feet, and 5 to 4 feet below grade), and the annular space between the probe zones sealed with hydrated bentonite. The surface seal will also consist of hydrated bentonite to the surface. The top of the tubing will be capped until sampling. Two of the proposed VMPs are located on a paved access road, and therefore will be finished with an 8-inch traffic-rated vault box.

The VMPs will be allowed to equilibrate for at least 48-hours prior to sampling, per State of California Department of Toxic Substances Control (DTSC) vapor probe sampling guidelines (July 2015).

Tetra Tech will return to the Property (a minimum of 48-hours after installation of the VMPs) to collect the soil vapor samples. The tubing cap will be removed and a new brass ¼-turn valve and hose barb will be compression fit to the top of the tubing at each location. Samples will be collected in 1-liter Summa canisters provided by the analytical laboratory (Eurofins Air Toxics of Folsom, CA).

The VMP sampling procedure is attached, which will be the same procedure used during implementation of the June 18, 2015 work plan, with one exception. Due to the larger diameter borehole created using hollow-stem augers versus direct push, each VMP purge volume will be significantly larger, requiring the use of a pump rather than a 6-liter Summa canister. Purge times are expected to be 20 to 30 minutes for each sample.

Sample and QA protocols will be consistent with the latest DTSC regulatory guidance (July 2015), including pre-purging and leak detection (performing a shut-in test, and using a helium gas shroud during sampling). The helium concentration inside the shroud, placed over the VMP tubing, will be monitored with a portable helium detector prior to drawing the sample.

The soil vapor samples will be analyzed for VOCs, including PCE and breakdown products, using Method TO-15, and for helium, using ASTM D1946, as a QA check to assess whether “short-circuiting” may have occurred (leak of ambient air down into the screen area).

The soil vapor samples will be analyzed using an expedited 3-day laboratory turn-around time.

Borehole Abandonment and Waste Management

Following VMP sampling and receipt of the data, the VMP borings will be over-drilled to 16 feet, and the VMP strings pulled from the ground. Each borehole will be grouted to near surface with neat cement. The two borings located in the asphalt drive area will be grouted to 6-inches below grade, and the asphalt repaired to match existing.

If necessary, one or more of the paired VMPs may be left in place to allow for follow-up sampling.

Soil cuttings generated as part of this investigation will be placed on, and covered with, 6-mil visqueen, in the vicinity of the work area. One soil sample will be collected for waste profiling purposes, and analyzed for VOCs, TPH, and LUFT 5 metals on a standard turnaround time (5-days).

Reporting

The results of the additional characterization sampling will be included in the site assessment report for the additional dry cleaner investigation, currently being prepared. Results will be compared to relevant agency screening criteria for potential vapor intrusion – State of California Regional Water Quality Control Board Environmental Screening Levels (ESL values), and State of California DTSC Office of Human and Ecological Risk HHRA Screening Values (Note 3 – July 14, 2014). Based on the findings of the overall additional dry cleaner investigation, a recommendation for source removal (soil excavation) will be outlined.

Schedule

Drilling is tentatively scheduled to begin Tuesday, September 8, 2015 (pending driller confirmation), and is estimated to require 3 days to complete, with soil data available 4 days after drilling is complete (Wednesday, Sept 16). Soil vapor sampling, following minimum 48-hour VMP equilibration, is tentatively scheduled for Monday, September 14, 2015. Due to the larger diameter auger hole (versus a Geoprobe direct push boring), VMP purge times will take 20-30 minutes per sample, requiring approximately 2 days to collect 24 soil vapor samples. Soil vapor data would be expected 4 days after sampling is complete (Friday, September 18). A two-person Tetra Tech crew is proposed for completing the field work.

CLOSURE

If you have any questions regarding this work plan, please contact Tim Costello (timothy.costello@tetratech.com) or Keith Hoofard (keith.hoofard@tetratech.com).

Sincerely,
TETRA TECH, INC.

Keith Hoofard
Senior Geologist

Stephen M. Carlton, PG, CHG
Principal Hydrogeologist

PROFESSIONAL GEOLOGIST
STEPHEN M. CARLTON
No. 4730
STATE OF CALIFORNIA
1-31-16

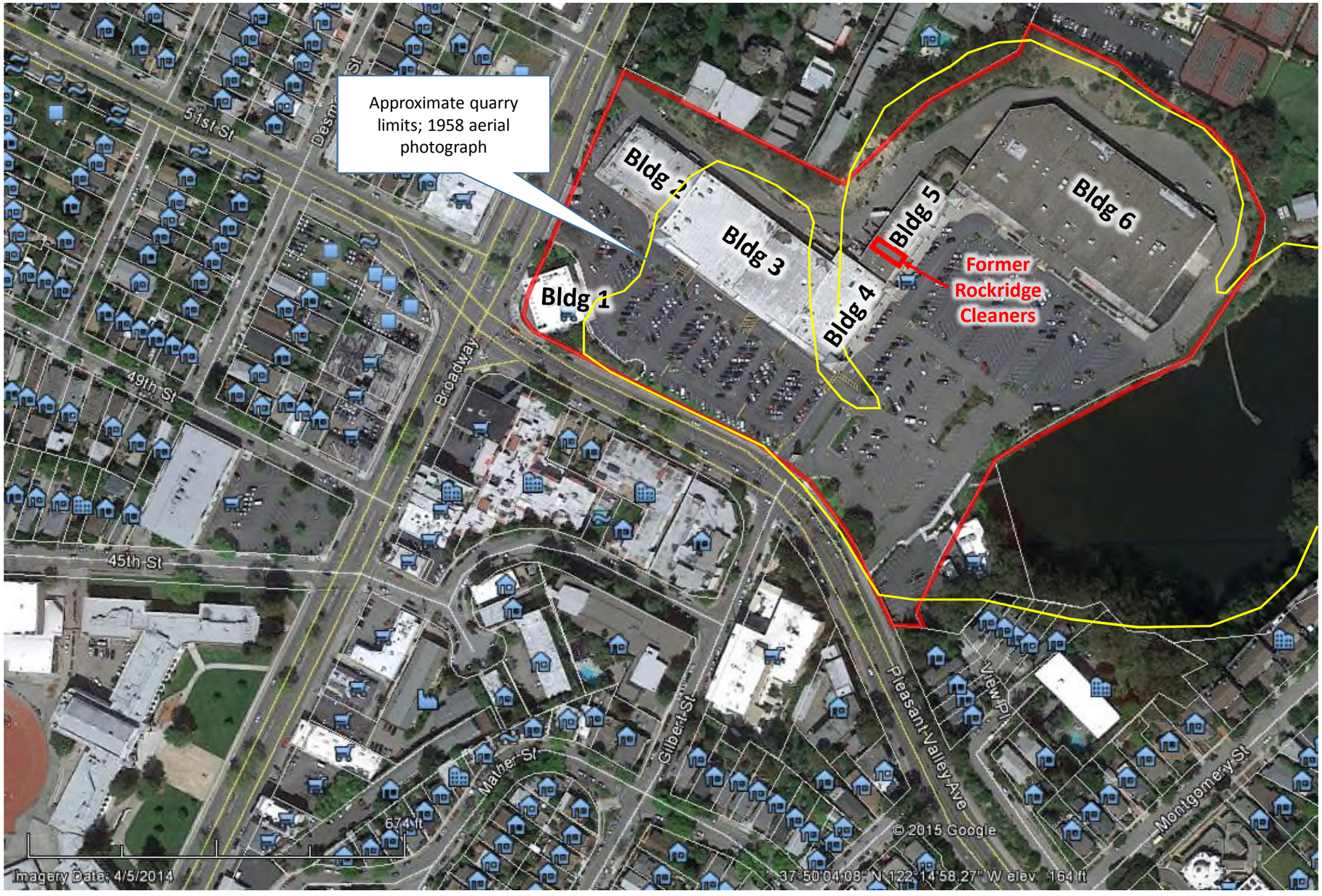
Attachments:
Figure 1 – Site Map
Figure 2 – Redevelopment Plan
Figure 3 – SMP Boundaries (with recent demolition field screening)
Figure 4 – Additional Soil and Soil Vapor Sample Locations (July/August 2015)
Figure 5 - Additional Soil and Soil Vapor Sample Data
Figure 6 – Proposed Additional/Step-Out Soil, Soil Vapor and Groundwater Sample Locations

Table 1 – Analytical Results – Soil (7/30/15 data)
Table 2 – Analytical Results – Soil Vapor (8/4/15 data)

Photographic Documentation (9 pages)

Active Soil Gas Sampling Protocol

cc: Rick Henderson, Terramar Retail Centers (rhenderson@terramarcenters.com)
Tim Costello, Tetra Tech, Inc.



SOURCE: ***Google Earth Pro, April 5, 2014.***

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TITLE: **Site Map - Existing Rockridge Shopping Center**

LOCATION: **5100 Broadway, Oakland, California**

TETRA TECH

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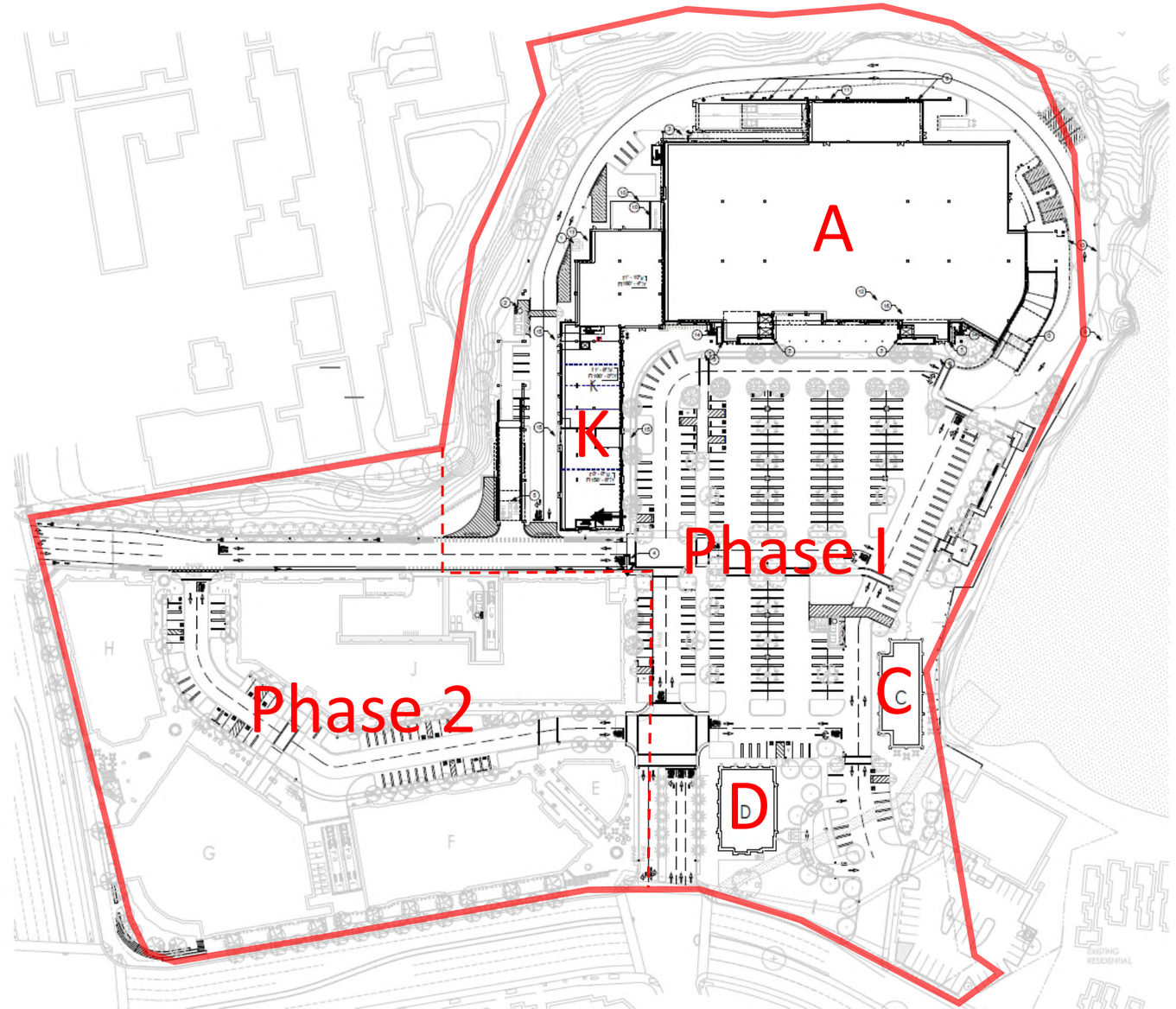
DRAFTED:	KDH rev. KM
FILE:	117-7429001.
DATE:	08/12/15

FIGURE: 1



SOURCE: *JRDV Architects, Drawing AS111, May 30, 2014.*

TITLE: **Redevelopment Plan - Proposed Shops at the Ridge**

LOCATION: **5100 Broadway Oakland, California**

TETRA TECH

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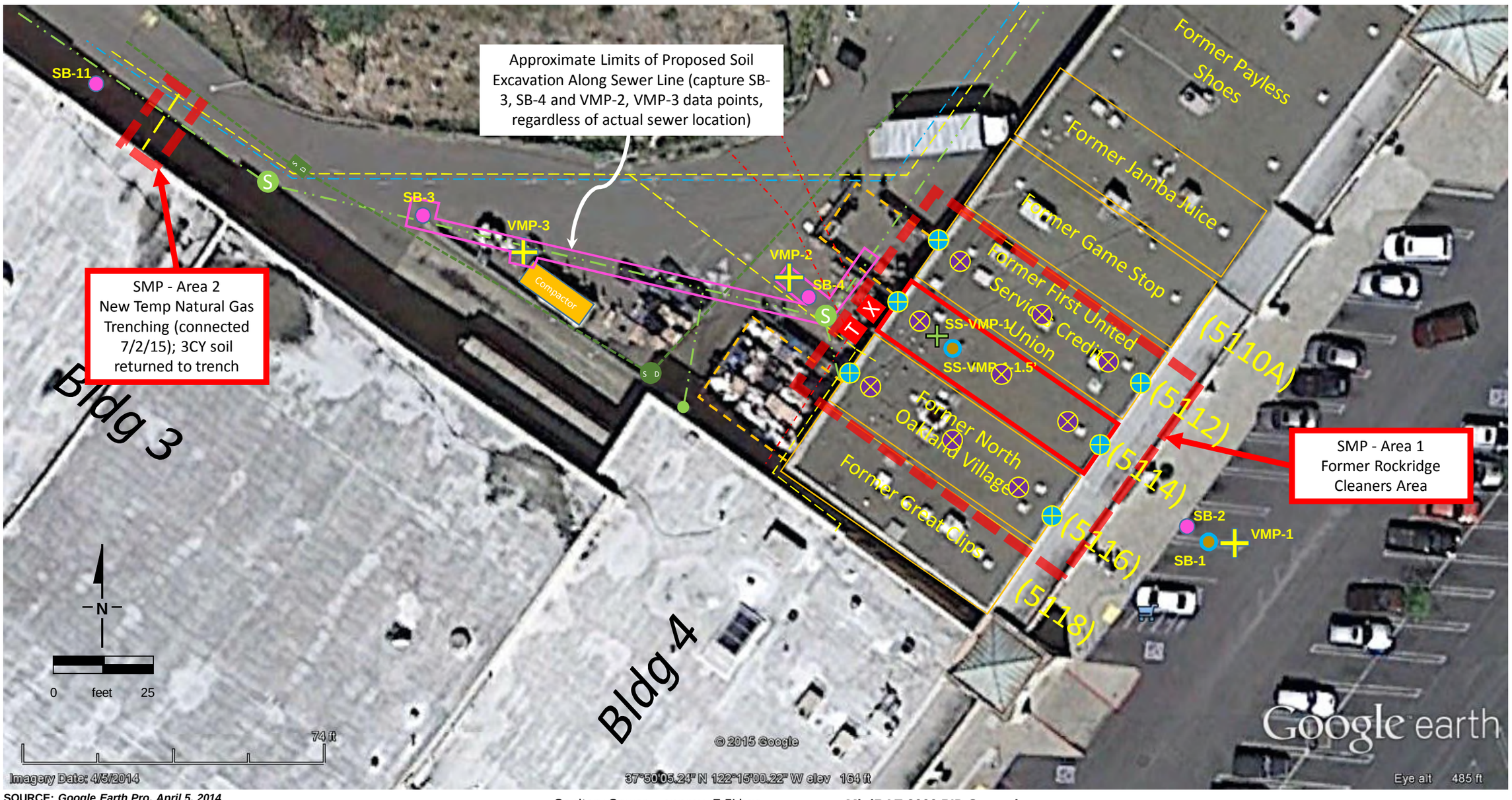
FILE:	117-7429001.
DATE:	08/19/15

FIGURE: **2**



SOURCE: ***Google Earth Pro, April 5, 2014.***

- Soil Boring – 2001 (GeoTrans)
- Soil Boring – 2014 (Tetra Tech – formerly GeoTrans)
- Soil Vapor Monitoring Point - 2014 (Tetra Tech)
- Sub-Slab Vapor Monitoring Point – 2014 (Tetra Tech)
- Sanitary Sewer – approx. 7.5' bgs
- Storm Drain
- Water Line
- Natural Gas Line
- Sanitary Sewer Man Hole
- Storm Drain Grate
- Existing Transformer
- Removed Transformer
- Chain Link Storage Enclosure

MiniRAE 3000 PID Screening

- 0-6" (from bottom of slab) ALL 0.0 ppmv
- 36" (beneath perimeter footing) ALL 0.0 ppmv

TITLE: **SMP Boundaries - Former Rockridge Cleaners**

LOCATION: **5114 Broadway Oakland, California**

TETRA TECH

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DATE:	08/12/15

FIGURE: 3

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Building 5

Demolished on July 23-24, 2015; slab removed July 27- 29, 2015

Former Drain Pipe Rusted Away

2" sewer line for bathroom, within raised floor

Concrete step up to 5112; under raised slab

Former Bathroom in 5112

Former Telecomm/Server Room in 5112

DC-SB-1/ DC-VMP-1

DC-SB-2

DC-SB-3/ DC-VMP-2

DC-SB-4

DC-SB-5/ DC-VMP-3

DC-SB-6

DC-SB-7

DC-SB-8/ DC-VMP-4

DC-SB-9/ DC-VMP-5

DC-SB-10/ DC-VMP-6

DC-SB-11/ DC-VMP-7

DC-SB-12

DC-SB-13

DC-SB-14/ DC-VMP-8

VMP-2

SB-4

SS-VMP-1

SS-VMP-1-1.5'

SB-2

VMP-1

SB-1

Ramp up

Step

Former Jamba Juice

Former Game Stop

Former First United Services Credit Union

Former North Oakland Village

Former Great Clips

(5110A)

(5112)

(5114)

(5116)

(5118)

20'

15'

60'

47'

20'

Building 3

N

0 feet 12

SOURCE: *Google Earth Pro, April 5, 2014.*

- Soil Boring – 2001 (GeoTrans)
- Soil Boring – 2014 (Tetra Tech – formerly GeoTrans)
- Soil Vapor Monitoring Point - 2014 (Tetra Tech)
- Sub-Slab Vapor Monitoring Point – 2014 (Tetra Tech)
- Soil Boring (5' bgs; sample 1' and 5') – 7/30/15 (Tetra Tech)
- Soil Vapor Monitoring Point (5' bgs) – 7/30/15 (Tetra Tech); sampled and abandoned on 8/4/15.
- 12" x 12" floor drain at rear of former cleaner, beneath raised slab installed to expand 5112 tenant space
- Former doors – walled over and not used by recent tenant (Credit Union)
- 4' x 4' foyer, original to 5112 and 5114, with entry door at sidewalk grade. Ramp installed across front of door at later date.
- 14" raised slab to match elevation of 5112 slab, expanding 5112 space (not original to 5114). Concrete debris from wall-cut between tenant spaces used as fill before concrete poor, which excluded foyer area initially. Foyer filled in will ceramic toilet debris at a later date and concreted over (likely when ramp was constructed).

TITLE: **Additional Soil and Soil Vapor Sample Locations Former Rockridge Cleaners**

LOCATION: **5114 Broadway Oakland, California**

TETRA TECH

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DATE:	08/12/15

FIGURE: **4**

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DC-SB-1 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	5.0	6.0	ND	ND	ND
5’	ND	ND	ND	ND	ND
DC-VMP-1 (µg/m3)	No Sample – Water in Probe				

DC-SB-2 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	25	36	ND	21	ND
5’	27	ND	ND	36	ND

DC-SB-10 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	2,700	ND	5.6	ND
5’	5.6	1,100	ND	12	ND
DC-VMP-6 (µg/m3)	65,000	19,000,000	ND	99,000	13,000

DC-SB-4 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	16	10	ND	15	ND
5’	23	6.9	ND	19	ND

DC-SB-3 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	11	ND	ND	ND
5’	26	12	ND	12	ND
DC-VMP-2 (µg/m3)	120,000	85,000	2,300	130,000	8,100

DC-SB-11 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	ND	ND	ND	ND
5’	ND	ND	ND	ND	ND
DC-VMP-7 (µg/m3)	ND	140	ND	ND	ND

DC-SB-6 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	8	21	ND	10	ND
5’	23	12	ND	17	ND

DC-SB-9 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	54	ND	6.4	ND
5’	6.0	39	ND	8.7	ND
DC-VMP-5 (µg/m3)	24,000	45,000	1,400	39,000	7,100

DC-SB-5 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	ND	ND	ND	ND
5’	23	19	ND	9.2	ND
DC-VMP-3 (µg/m3)	4,400	11,000	ND	4,000	30

DC-SB-7 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	5.2	6.8	ND	ND	ND
5’	6.0	7.5	ND	ND	ND

DC-SB-14 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	ND	ND	ND	ND
5’	ND	ND	ND	ND	ND
DC-VMP-8 (µg/m3)	7,400	380	380	720	6,100

DC-SB-8 (µg/Kg)	Cis-1,2-DCE	PCE	Trans-1,2-DCE	TCE	VC
1’	ND	7.8	ND	ND	ND
5’	6.3	8.1	ND	12	ND
DC-VMP-4 (µg/m3)	2,600	54,000	ND	41,000	ND

ing 5

Demolished on July 23-24, 2015;

15

Ramp up

Step

X

T

DC-VMP-7

SS-VMP-1

SS-VMP-1-1.5'

DC-SB-13

DC-SB-12

(5114)

(5116)

(5118)

8 3

0 feet 12

SOURCE: *Google Earth Pro, April 5, 2014.*

TITLE: **Additional Soil and Soil Vapor Sample Data**
Former Rockridge Cleaners

LOCATION: **5114 Broadway**
Oakland, California

TETRA TECH

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FIGURE: **5**

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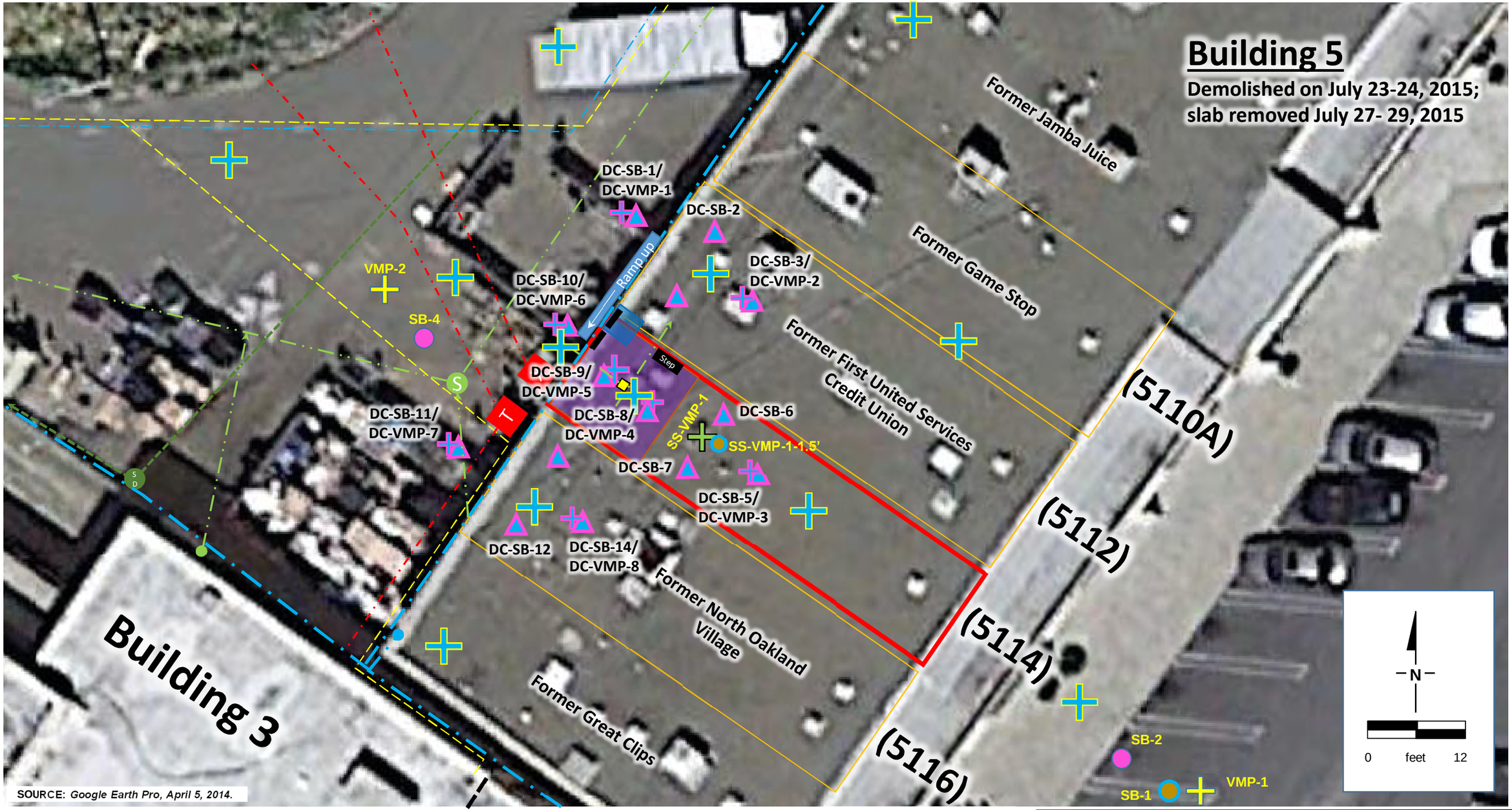

- Soil Boring – 2001 (GeoTrans)
- Soil Boring – 2014 (Tetra Tech – formerly GeoTrans)
- Soil Vapor Monitoring Point - 2014 (Tetra Tech)
- Sub-Slab Vapor Monitoring Point – 2014 (Tetra Tech)
- Soil Boring (5' bgs; sample 1' and 5') – 7/30/15 (Tetra Tech)
- Soil Vapor Monitoring Point (5' bgs) – 7/30/15 (Tetra Tech); sampled and abandoned on 8/4/15.

- Proposed Soil, Soil Vapor and GW Sample Location
  - Soil – sample 10', 15' and 20', bgs
  - Soil Vapor – sample 5' and 15', bgs
  - GW – 1 sample, if encountered (GW encountered at 22 feet bgs in boring SB-1 in 2014, but generally absent)

TITLE: **Proposed Additional/Step-Out Soil, Soil Vapor and GW Sample Locations - Former Rockridge Cleaners**

LOCATION: **5114 Broadway, Oakland, California**

TETRA TECH

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FIGURE: **6**

TABLE 1
Analytical Results Summary - Soil
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date Sampled	Depth (feet, bgs)	VOCs - EPA 8260B (µg/Kg) cis-1,2-DCE	PCE	TCE
Adjacent Former Tenant Space to North - 5112 Broadway					
DC-SB-1-1'	7/30/2015	1	5.0	6.0	< 5.0
DC-SB-1-5'	7/30/2015	5	< 5.0	< 5.0	< 5.0
DC-SB-2-1'	7/30/2015	1	25	36	21
DC-SB-2-5'	7/30/2015	5	27	< 5.0	36
DC-SB-3-1'	7/30/2015	1	< 5.0	11	< 5.0
DC-SB-3-5'	7/30/2015	5	26	12	12
DC-SB-4-1'	7/30/2015	1	16	10	15
DC-SB-4-5'	7/30/2015	5	23	6.9	19
5114 Broadway Former Tenant Space					
DC-SB-5-1'	7/30/2015	1	< 5.0	< 5.0	< 5.0
DC-SB-5-5'	7/30/2015	5	23	19	9.2
DC-SB-6-1'	7/30/2015	1	8.0	21	10
DC-SB-6-5'	7/30/2015	5	23	12	17
DC-SB-7-1'	7/30/2015	1	5.2	6.8	< 5.0
DC-SB-7-5'	7/30/2015	5	6.0	7.5	< 5.0
DC-SB-8-1'	7/30/2015	1	< 5.0	7.8	< 5.0
DC-SB-8-5'	7/30/2015	5	6.3	8.1	12
DC-SB-9-1'	7/30/2015	1	< 5.0	54	6.4
DC-SB-9-5'	7/30/2015	5	6.0	39	8.7
DC-SB-10-1'	7/30/2015	1	< 5.0	2,700	5.6
DC-SB-10-5'	7/30/2015	5	5.6	1,100	12
Adjacent Former Tenant Space to South - 5116 Broadway					
DC-SB-11-1'	7/30/2015	1	< 5.0	< 5.0	< 5.0
DC-SB-11-5'	7/30/2015	5	< 5.0	< 5.0	< 5.0
DC-SB-12-1'	7/30/2015	1	< 5.0	< 5.0	< 5.0
DC-SB-12-5'	7/30/2015	5	< 5.0	< 5.0	< 5.0
DC-SB-13-1'	7/30/2015	1	< 5.0	< 5.0	< 5.0
DC-SB-13-5'	7/30/2015	5	8.5	< 5.0	8.6
DC-SB-14-1'	7/30/2015	1	< 5.0	< 5.0	< 5.0
DC-SB-14-5'	7/30/2015	5	< 5.0	< 5.0	< 5.0
ESL - Commercial			190	700	460
CHHSL - Commercial			NV	NV	NV

Notes:

Soil borings compeleted on bare ground, shortly after building slab and asphalt out back were removed (July 27-29, 2015). Former building pad was 4-5" thick concrete, and aspahlt out back was 8-10-inches thick.

ESL	Environmental Screening Level, Regional Water Quality Control Board, Table A-2, Commercial Land Use, Interim Final, December 2013.
CHHSL	California Human Health Screening Level, Department of Toxic Substances Control (DTSC) / Office of Environmental Health Hazard Assessment (OEHHA), soil screening numbers for Commercial land use, Table 1, September 2010.
µg/Kg	micrograms per kilogram or parts per billion (ppb).
mg/Kg	milligrams per kilogram or parts per million (ppm).
NV	No Value
	Exceeds Screening Value

TABLE 2

Analytical Results Summary - Soil Vapor
Former Rockridge Cleaners Area
5100 Broadway (Former 5114 tenant space)
Oakland, California

Sample Location	Date	Depth (feet, bgs)	VOCs - EPA TO-15 (µg/m3) 1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene (PCE)	trans-1,2-Dichlorethene	Trichloroethene (TCE)	Vinyl Chloride	Modified ASTM D-1946 Leak Compound Helium (%)
Adjacent Former Tenant Space to North - 5112 Broadway									
DC-VMP-1	8/4/2015	4.75 - 5	No Sample (1)						NA
DC-VMP-2	8/4/2015	4.75 - 5	680	120,000	85,000	2,300	130,000	8,100	< 0.11
5114 Broadway Former Tenant Space									
DC-VMP-3	8/4/2015	4.75 - 5	< 23	4,400	11,000	< 23	4,000	30	5.4
DC-VMP-4	8/4/2015	4.75 - 5	< 57	2,600	54,000	< 57	41,000	< 37	< 0.12
DC-VMP-5	8/4/2015	4.75 - 5	280	24,000	45,000	1,400	39,000	7,100	< 0.11
DC-VMP-6	8/4/2015	4.75 - 5	<15,000	65,000	19,000,000	< 15,000	99,000	13,000	< 0.12
Adjacent Former Tenant Space to South - 5116 Broadway									
DC-VMP-7	8/4/2015	4.75 - 5	< 4.6	< 4.6	140	< 4.6	< 6.3	< 3	< 0.14
DC-VMP-8	8/4/2015	4.75 - 5	55	7,400	380	380	720	6,100	< 0.11
ESL - Commercial			880,000	31,000	2,100	260,000	3,000	160	NA
CHHSL - Commercial			NV	44,000	600	89,000	1,800	45	NA

Notes:

NOTE: Additional compounds detected below screening values; see laboratory data sheets.

(1) No sample due to water in probe. Leaking water valve boxes in immediate vicinty are suspected source of water, damaged during recent building demolition.

µg/m3 micrograms per cubic meter

ESL RWQCB Environmental Screening Level, Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion, Table E-2, Interim Final, December 2013.

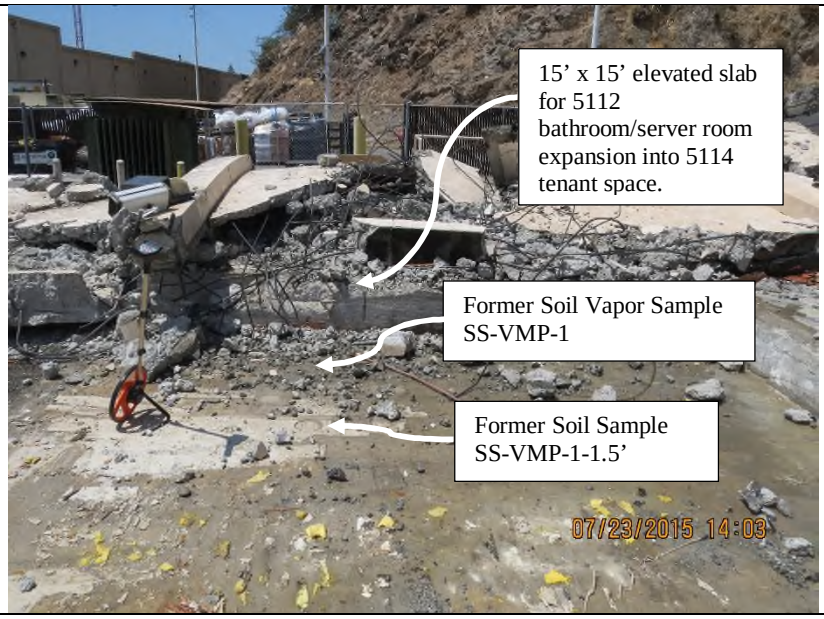
CHHSL California Human Health Screening Level (CHHSL), Office of Environmental Health Hazard Assessment (OEHHA), Table 3; Soil-Gas Screening Values, September 23, 2010.

NV No Value

NA Not Applicable

Exceeds Screening Value

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 1 **Description:** During building demolition, it was discovered that the bathroom/server room at the rear of 5112 was actually the rear 15-feet of the 5114 dry cleaner tenant space, constructed atop a concrete pad installed to match the 5112 tenant space floor elevation. **Orientation:** Northwest	
Photo: 2 **Description**: Rear of dry cleaner tenant space. Demolition revealed a rusted steel door concealed in the wall, split across the 5112/5114 tenant spaces, with bottom of door behind the concrete ramp, at sidewalk grade. Sidewalk is beneath the ramp. **Orientation:** Southeast	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
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Photo: 3 **Description:** Rusted out steel door. Formerly served both 5112/5114 tenant spaces. **Orientation:** Southeast	
Photo: 4 **Description:** Elevated slab removed from rear of 5114. Consists of concrete wall debris created when 5112 expanded into 5114 space. The notch in the slab represents the 4'x4' foyer entry for the original steel door that served both 5112 and 5114 spaces. Foyer was not initially filled in when elevated slab was installed in 5114.	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
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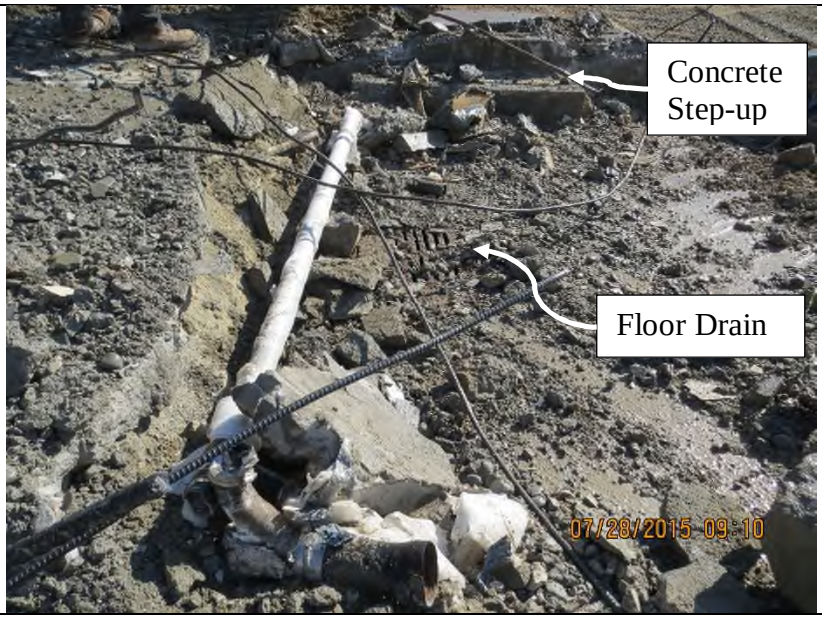
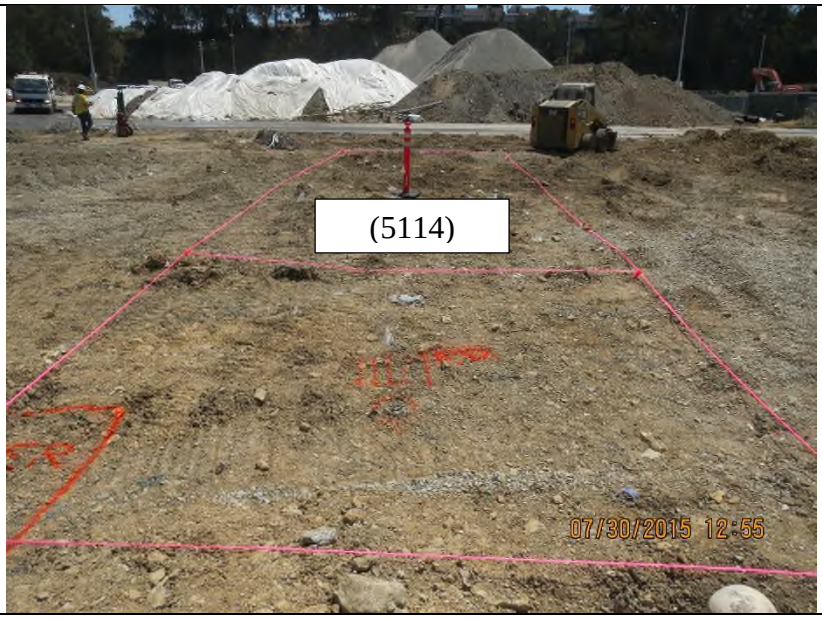
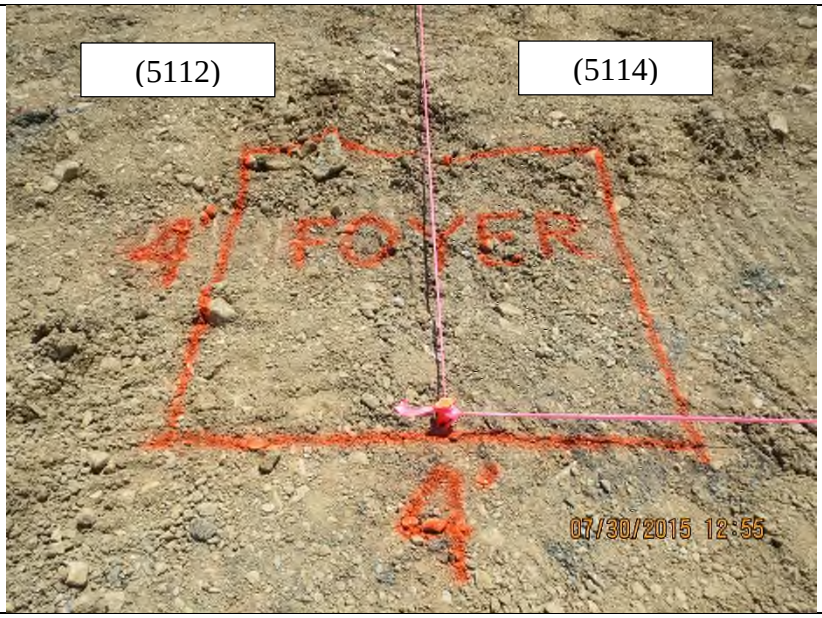
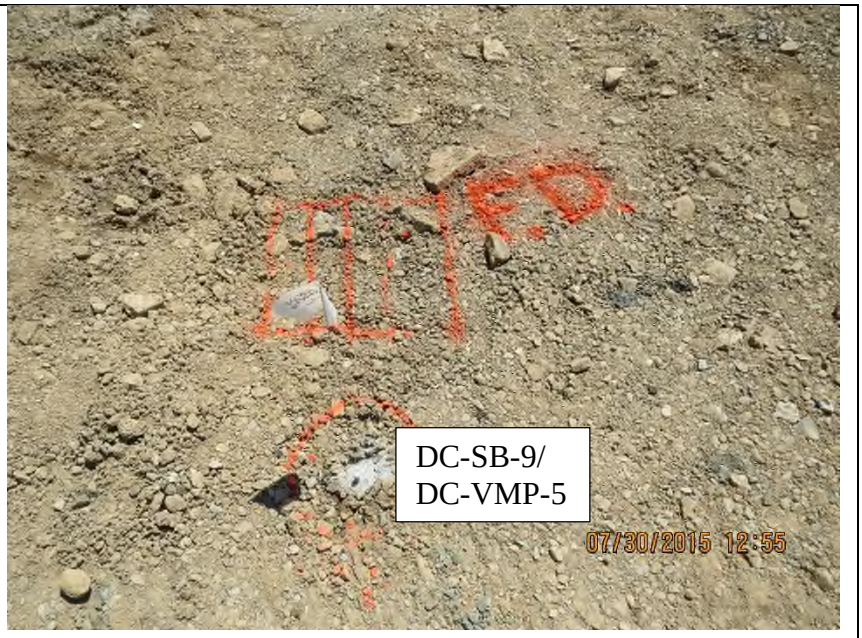
Photo: 5 **Description:** 12" x 12" steel floor drain in the original concrete slab of 5114, beneath the elevated slab used to expand 5112 into 5114. White wrapped piping is more recent sewer line for bathroom in 5112 space. Concrete step up from 5114 to 5112 visible in background, used prior to 5112 expansion into 5114. **Orientation:** Northeast	
Photo: 6 **Description:** PID reading of floor drain immediately after uncovering (0.0 ppmv). Associated drain piping headed to rear of tenant space, but was only identified by a rust stain in the soil. **Orientation:**	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 7 **Description:** Looking southeast along the length of the former 5114 tenant space in Building 5; former Rockridge Cleaners. Near, square area, represents bathroom/server room raised floor area, most recently associated with the 5112 tenant space (to left). **Orientation:** Southeast	
Photo: 8 **Description:** Former entrance foyer to both 5112 and 5114 tenant spaces. The 5112 floor slab was elevated 14" compared to the 5114 floor slab. **Orientation:** Southeast	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 9 **Description:** Former 12" x 12" floor drain located in 5114 floor slab, subsequently covered by raised floor slab during expansion of 5112 tenant space into the 5114 tenant space (15' x 15' area to back). **Orientation:** Southeast	
Photo: 10 **Description:** Looking southwest along the rear of former 5112 tenant space. **Orientation:** Southwest	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 11 **Description:** Looking northwest along the length of the former 5114 tenant space in Building 5; former Rockridge Cleaners. **Orientation:** Northwest	
Photo: 12 **Description:** Sample point DC-SB-14/DC-VMP-8. **Orientation:** Northwest	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 13 **Description:** Sample point DC-SB-3/DC-VMP-2. Water valve box and DC-SB-1/DC-VMP-1 (next to orange delineator) visible in background. Water line is live. **Orientation:** Northwest	

Photo: 14 **Description:** Sample point DC-SB-10/DC-VMP-6. Remnant slab of 8- to 10-inch thick asphalt is visible next to bollard. Water valve box visible left of frame. **Orientation:** Southwest	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
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Oakland California
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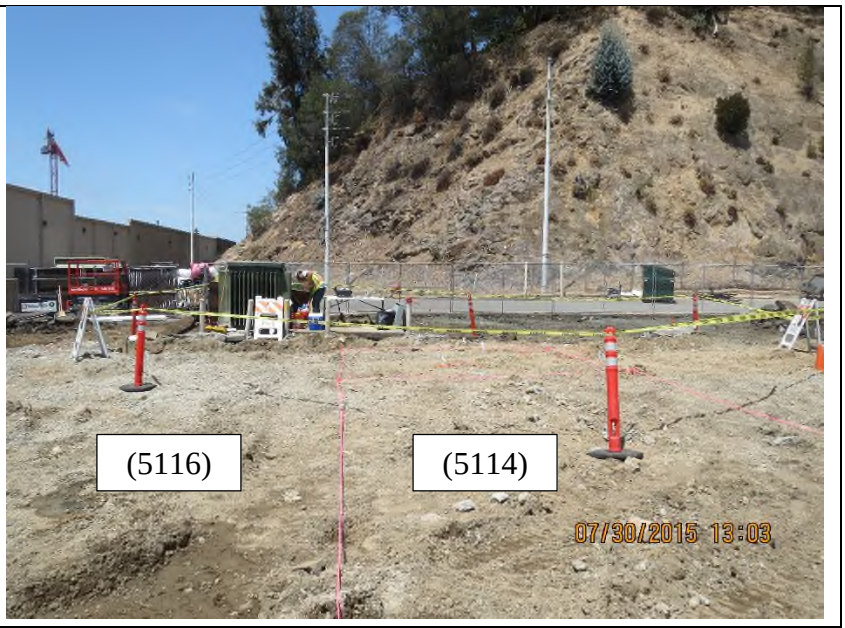
Photo: 15 **Description:** Sample point DC-SB-11/DC-VMP-7. **Orientation:** Northeast	
Photo: 16 **Description:** Looking northwest along the dividing line between 5114 and 5116 tenant spaces. **Orientation:** Northwest	

Photographic Documentation
Soil Boring and Vapor Monitoring Probe Installation
Former Rockridge Dry Cleaner – 5100 Broadway
(5114 tenant space area)
Oakland California
Project No.: 117-7429001.06

Photo: 17 **Description:** Summa canisters set up for sampling VMPs on August 4, 2015. **Orientation:** West	
Photo: 18 **Description:** Typical VMP sampling setup. **Orientation:** N/A	

Active Soil Gas Sampling Protocol

Active soil gas samples are collected from the vapor monitoring points (VMPs) by connecting ¼-inch diameter Teflon tubing (LARWQCB, 2015), from the hose barb at the top of the VMP to a dedicated sampling manifold. A laboratory-supplied manifold prevents soil particles or water from entering the sample canisters and restricts the air flow to less than 200 milliliters per minute (mL/min). Manifolds are used once and then returned to the laboratory for cleaning.

Three purge volumes are extracted from each VMP using a 6-liter Summa canister that is only used for purging (LARWQCB, 2015). The soil gas samples are collected in a 1-liter Summa canister. As part of the quality control procedures, Summa canister vacuum levels are measured prior to and after collecting each soil gas sample. These measurements are recorded on the sample label and on the sample chain of custody form.

Ambient air leaks during soil gas sampling may dilute the samples and produce results that underestimate the actual site concentrations or contaminate the sample with external contaminants. Prior to collecting a soil gas sample in the 1-liter Summa canister, a shut-in test is conducted followed by a leak detection test using helium.

The shut-in test is used to test if the above-ground fittings are air tight. The soil gas sampling apparatus is assembled (e.g. valves, tubing, manifold, fittings) downstream from the top of the probe. The apparatus is evacuated using a vacuum of about 20 inches of mercury. The applied vacuum is allowed to equilibrate in the apparatus, all valves are then closed, and the vacuum held for at least one minute. If there is an observable loss of vacuum, then the fittings are adjusted as needed until the apparatus holds a vacuum (LARWQCB, 2015).

Helium is a naturally occurring compound and is present in air at about 5 parts per million by volume (ppmv). The potential for ambient air leaks is evaluated using a shroud. Assuming a reasonably good seal can be obtained with the shroud, the ambient air leak can be quantified with helium. The apparatus for leak detection is set up after the shut-in test has been conducted. Leak detection is implemented at the well head using industrial-grade helium gas within the sampling shroud. The shroud consists of a plastic container placed over the entire top of the VMP well head. The shroud has two ports fitted with ¼-inch stainless steel or brass through-wall bulkhead fittings equipped with hose barbs. One barb is for injection of the helium into the shroud and the second barb is for the helium detector to connect to the shroud. The Summa canister sample tubing is fed through a third hole in the shroud, fitted with a rubber grommet, and connected to the VMP via compression fittings. The helium cylinder is connected to the shroud via ¼-inch tubing.

The shroud is secured to cover the entire well top and aluminum foil or hydrated bentonite is used to seal around the bottom the shroud where the shroud does not fit evenly to the ground. The helium gas is injected into the shroud to a concentration equal to 50 percent by volume, as measured using a helium gas detector. A purge volume is calculated using the volume of the screened probe tip, the volume of the rigid tubing from the probe tip to brass ball valve at the

surface, the filter pack void space volume, and the length of tubing from the brass ball valve to the vacuum 6-liter Summa canister. Three purge volumes are purged from the well tubing using the vacuum 6-liter Summa canister. The 6-liter Summa canister is closed and the 1-liter Summa sample canister valve is opened to collect the soil gas sample. The helium concentration inside the shroud is measured continuously using a helium gas detector during the soil gas sampling. The concentrations of helium are noted at the start and end of sampling.

The 1-liter Summa canisters is submitted under COC documentation to Air Toxics, LTD in Folsom, California and analyzed for VOCs using Method TO-15 Direct Inject and helium to assess potential leak detection.

Helium is analyzed based on a percentage basis. An ambient air leak of five percent of the concentration within the shroud is acceptable for quantitative testing performed by shrouding. If the concentration of helium in the laboratory sample is less than five percent of the helium concentration in the shroud (using the helium gas detector), then the sample is considered valid.