

November 30, 2012  
75.75354.0002

Ms. Karel Detterman  
Alameda County  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**RECEIVED**

9:08 am, Dec 11, 2012

Alameda County  
Environmental Health

Subject: Data Gap Workplan, 580 Market Place Shopping Center, 3735-4065 East Castro Valley Boulevard, Castro Valley, California, Case No. RO0003097

Dear Ms. Detterman:

Cardno ATC has prepared this workplan to address data gaps identified by the Alameda County Environmental Health Services (ACEH) and Cardno ATC. Identified data gaps associated with the site include an assessment of groundwater for potential impact by volatile organic compounds (VOCs), evaluation of sub-slab vapor data, and conducting a sensitive receptor study. This workplan was requested by the ACEH through correspondence dated October 11, 2012.

The scope of work includes mobilization to the site, advancing three soil borings into the saturated zone, completing one soil boring as a groundwater monitoring wells, collecting sub-slab vapor samples from the Dryclean 580 facility and adjoining facilities, chemical analyses of soil, groundwater, and vapor samples, conducting a sensitive receptor study, and preparing a summary report detailing site activities.

## **SITE LOCATION**

The site is located north of Interstate 580, southeast of East Castro Valley Boulevard, and west of Chaparral Lane in the City of Castro Valley, California, as shown on **Figure 1**. A site plan illustrating the layout of the shopping center and locations of recent soil borings are shown on **Figure 2**.

## **LAND USAGE**

The property and surrounding area was used as agricultural land with rural residential developments prior to 1990. The property was developed as a 10.21 acre retail shopping center in 1990. Dryclean 580 has operated at 3937 East Castro Valley Boulevard since 1990. Current land use is commercial within the 580 Market Place Shopping Center surrounded by residential developments.

## **ENVIRONMENTAL HISTORY**

A soil gas survey was conducted as part of a Phase II Site Investigation in November 1997. During the soil gas survey, a total of 16 soil gas samples were collected from 11 soil gas sampling locations (SG-1 through SG-11) at the site. Trichloroethene (TCE) was detected at concentrations ranging from 1.4 to 6.8 micrograms per liter ( $\mu\text{g/L}$ ). Tetrachloroethylene (PCE) was detected at concentrations ranging from 1.7 to 119.7  $\mu\text{g/L}$ . A soil sample collected at a depth of 7 feet below grade from SB-1 located adjacent to an identified sewer line did not contain detectable concentrations of TCE and PCE.

A limited subsurface assessment was conducted at the site in March 2012. Four soil borings (ATC-1 through ATC-4) were advanced to depths ranging from 24.5 to 31 feet below grade where refusal was encountered. Soil samples were collected continuously and field screened for the presence of VOCs. VOCs were detected in soil samples collected from ATC-1, ATC-2, and ATC-3. Groundwater was not encountered in any of the soil borings advanced at the site.

A site conceptual model (SCM) was prepared at the request of the ACEH through correspondence dated October 11, 2012. The SCM summarizes the site setting, environmental history, geologic and hydrogeologic characteristics, impacts to soil and groundwater, exposure pathways, remedial actions, and data gaps at the site. The SCM was developed to use as a guidance tool for future investigative or remedial activities.

## **SCOPE OF WORK**

### **Planning and Permits**

Cardno ATC will obtain the necessary Alameda County Water District (ACWD) permits for the advancement of two soil borings and installation of one groundwater monitoring well. Cardno ATC will schedule field personnel and equipment, notify Underground Services Alert to locate underground utilities as required, and perform other necessary field preparation and job start-up activities.

### **Groundwater Assessment**

This task includes mobilization to the site, advancing three soil borings into first encountered groundwater, and collecting soil and groundwater samples. The borings will be advanced into the saturated zone or until refusal is encountered. Since the unconsolidated materials beneath the site are known to exhibit low permeability and yield low volumes of water, temporary casing with screened intervals and sand pack may need to be installed for up to 24 hours to allow groundwater to infiltrate into the borings. If temporary casings are needed, Cardno ATC will ensure that the borings are protected by placing a bentonite seal above the screened interval to within a few feet beneath the surface. One of the borings will be completed as a groundwater monitoring well. Two of the proposed soil borings will be properly abandoned and backfilled in accordance with ACEH requirements. Proposed soil boring locations are illustrated on **Figure 3**.

The borings will be cleared for underground utilities using air knife/hydrovac methods and advanced using a truck mounted hollow-stem auger drilling rig. Drilling will be conducted by a State-licensed C57 drilling company. A field geologist will be present to log soil samples. Descriptions of soil types encountered and sample collection intervals will be recorded on boring logs. Soil samples will be collected continuously, field screened with a Photoionization Detection (PID) meter, and approximately three soil samples from each boring will be submitted for chemical analyses.

Soil and groundwater samples collected during the advancement of the soil borings will be immediately placed in a cooler with ice and delivered under chain-of-custody documentation to a State-certified analytical laboratory. The samples will be analyzed for VOCs by EPA Method 8260B.

### **Well Installation Activities**

One of the proposed soil borings will be completed as a groundwater monitoring well. The well will be constructed of 2-inch inside diameter schedule 40 poly vinyl chloride (PVC) casing with approximately 15 feet of 0.020-inch slotted screen. The top of the screened interval will be placed at approximately five feet above static water levels extending to approximately 10 feet below static water levels. The annulus of the screened portion of the groundwater monitoring well will be backfilled with a #3 Monterey sand (or equivalent) filter pack from the base of the boring to approximately two feet above the top of the screened interval. An approximately 2-foot layer of medium bentonite chips will be placed on top of the upper filter pack and hydrated to form an annular seal. The remaining annular space to the bottom of the concrete seal will be filled with a neat cement grout. To protect the integrity of the well, locking, watertight well plugs will be installed on each well and a watertight wellhead labeled "monitoring well" will be concreted over the proposed well.

Once installed, the well will be developed using surge and bail techniques until the produced water is relatively sediment free. Field personnel will monitor the temperature, pH, and electrical conductivity during each successive purge volume (casing and sand pack). Purged groundwater collected during the well development activities will be contained in DOT approved 55-gallon drums labeled as non-hazardous waste and staged on-site pending analytical results.

The location and elevation of the well will be surveyed to Geotracker standards. The new well will be surveyed to NAD83 horizontal datum and NAVD88 vertical datum by a California Licensed Professional Land Surveyor.

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### **Sub-slab Vapor Sampling**

Sub-slab vapor sampling will be conducted by installing up to eleven sub-slab vapor sampling points to determine vapor concentrations beneath the existing structure at the Dryclean 580 facility and at adjacent tenant spaces in accordance with CalEPA's *Advisory Active Soil Gas Investigations* dated April 2012. The sub-slab vapor sampling points will be constructed of approximately two to three feet of 1/8-inch outside diameter Teflon or Nylaflow® tubing attached to a one-inch long filter screen emplaced approximately two inches beneath the concrete slab of the structure and above native soil. Dry granular bentonite will be used to fill the boring through the concrete slab and hydrated granular bentonite will be used at the surface to create a leak tight seal. Proposed sub-slab vapor point sampling locations are illustrated on **Figure 3**.

Prior to sampling, the sub-slab vapor sampling points will be allowed to equilibrate for at least two hours following installation, a shut-in test will be conducted on each purge and sample assembly, a leak test will be conducted at each sampling location, and a purge volume test will be conducted on at least one sub-slab vapor sampling point to determine the appropriate number of purge volumes to remove from each point. The shut-in test will be conducted by applying a vacuum of approximately 100 inches of water to the purge and sample apparatus for a period of ten minutes. The shut-in test will be considered acceptable if no loss of vacuum is observed. Leak testing will be conducted at each sub-slab sampling point. The leak test will be conducted by applying isopropyl alcohol to a cotton swab and placing the cotton swab within a shroud over the sampling point.

The stepped purge volume test will be conducted by removing one, three, and ten purge volumes (internal volume of tubing) from a selected sub-slab vapor sampling point and collecting a sample after each step. Purging and sampling will be conducted at a rate of 100 to 200 milliliters per minute and will not exceed a vacuum of 100 inches of water within the purge and sample apparatus. The appropriate number of purge volumes will be selected based on the analytical data provided by the on-site mobile laboratory associated with respect to each stepped purge volume. If none of the analytes of interest are detected during the stepped purge test, a default of three purge volumes will be selected. Vapor samples associated with the stepped purge volume test will be collected in glass syringes for the mobile laboratory.

Vapor samples collected in glass syringes will be immediately transferred to a state-certified mobile laboratory located on-site and analyzed for the presence of VOCs by EPA Method 8260B, methane by EPA Method 8015M, and for oxygen and carbon dioxide by an appropriate EPA Method using a gas chromatograph (GC) and/or a thermal conductivity detector (TCD). At least one duplicate sample will be collected from a selected sub-slab vapor sampling point that will be used for quality assurance and quality control (QA/QC) purposes. The purpose of the mobile laboratory is to field verify the presence of VOCs in vapor samples and to assure the integrity of each of the sub-slab vapor sampling points.

Vapor samples collected in Summa canisters will be submitted under chain of custody documentation to a state-certified fixed base laboratory and analyzed for the presence of VOCs

by EPA Method TO-15 or TO-17, methane by EPA Method 8015M, and for oxygen and carbon dioxide by an appropriate EPA Method using a gas chromatograph (GC) and/or a thermal conductivity detector (TCD). At least one duplicate sample will be collected from a selected sub-slab vapor sampling point that will be used for QA/QC purposes.

Analytical results will be compared to the California RWQCB, San Francisco Bay Region Environmental Screening Levels (ESLs) and the California Human Health Screening Levels (CHHSLs).

Upon completion, the sub-slab vapor sampling points will be destroyed by removing the tubing and patching the foundation borings with quick drying cement.

### **Sensitive Receptor Study**

Cardno ATC will conduct a sensitive receptor study within a 2,000 foot search radius from the site. The SRS will include review of California Department of Water Resources (DWR) well records to identify water supply wells located within the 2,000-foot search radius, field verification of identified wells and surface water bodies, and identification of underground utilities within 500 feet of the 580 Market Place Shopping Center. Additional receptors will include schools, hospitals, elderly care homes, and other public domains.

### **Report Preparation**

Upon completion of field activities, Cardno ATC will prepare a summary report that will include a description of field activities, laboratory analytical data in tabular form, boring logs, site plans, laboratory report sheets, a comparison of soil vapor analytical data to the RWQCB, San Francisco Bay Region ESLs and/or CHHSLs, and any additional modeling if necessary.

### **Projected Schedule**

Once approval of this workplan has been received, Cardno ATC will confirm a schedule for drilling and sampling activities. Cardno ATC will notify the ACEH at least 48 hours prior to beginning any field activities. The summary report will be submitted to the ACEH approximately 60 days after the completion of all field activities.

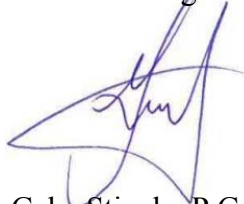
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If you have any questions or require additional information regarding this workplan, please contact Gabe Stivala at (925) 223-7123.

Respectfully submitted,  
Cardno ATC

*Nathan Christman*

Nathan Christman, P.G.  
Senior Geologist



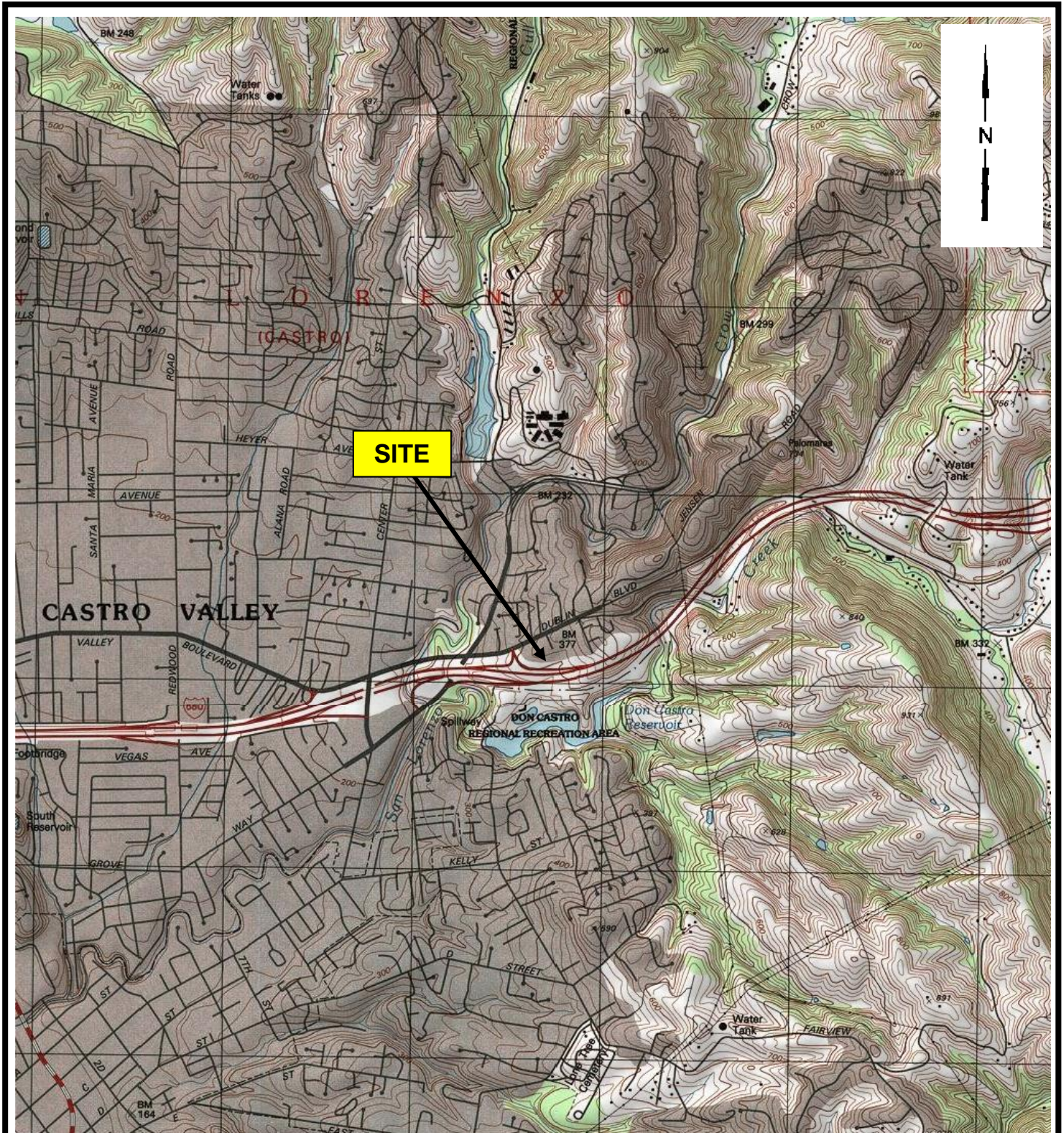
Gabe Stivala, P.G.  
Senior Project Manager



Attachments

cc: Mr. Chuck Gurney, Weingarten Realty Investors  
Mr. Thomas J. Treacy, John Hancock Life Insurance Company USA





SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP  
 CASTRO VALLEY QUADRANGLE, CALIFORNIA, DATED 1968, PHOTOREVISED 1987.

FIGURE 1  
**SITE VICINITY MAP**

**580 MARKET PLACE SHOPPING CENTER  
 3735-4065 EAST CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA 94552**



1117 Lone Palm Ave, Ste 201B  
 Modesto, CA 95351  
 (209) 579-2221

PROJECT NO: 075.75356.0002

DESIGNED BY: JK

SCALE: 1:24,000

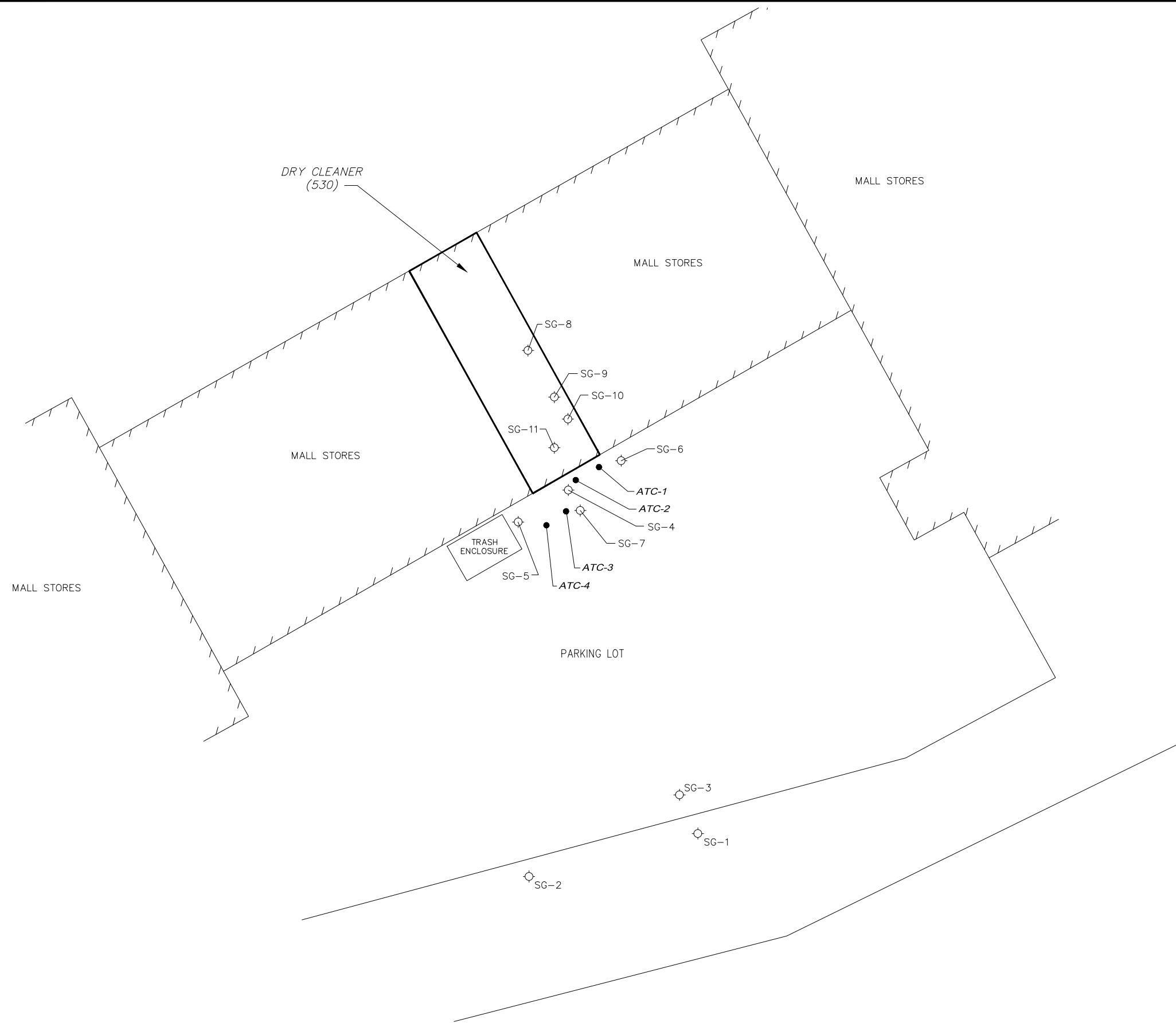
REVIEWED BY: JH

DRAWN BY: JK

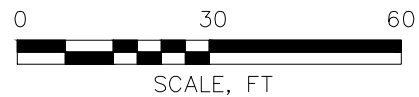
DATE: 10/12

FILE: LOCATION






**LEGEND**  
 ● SOIL BORING  
 ⊕ SOIL GAS SAMPLE



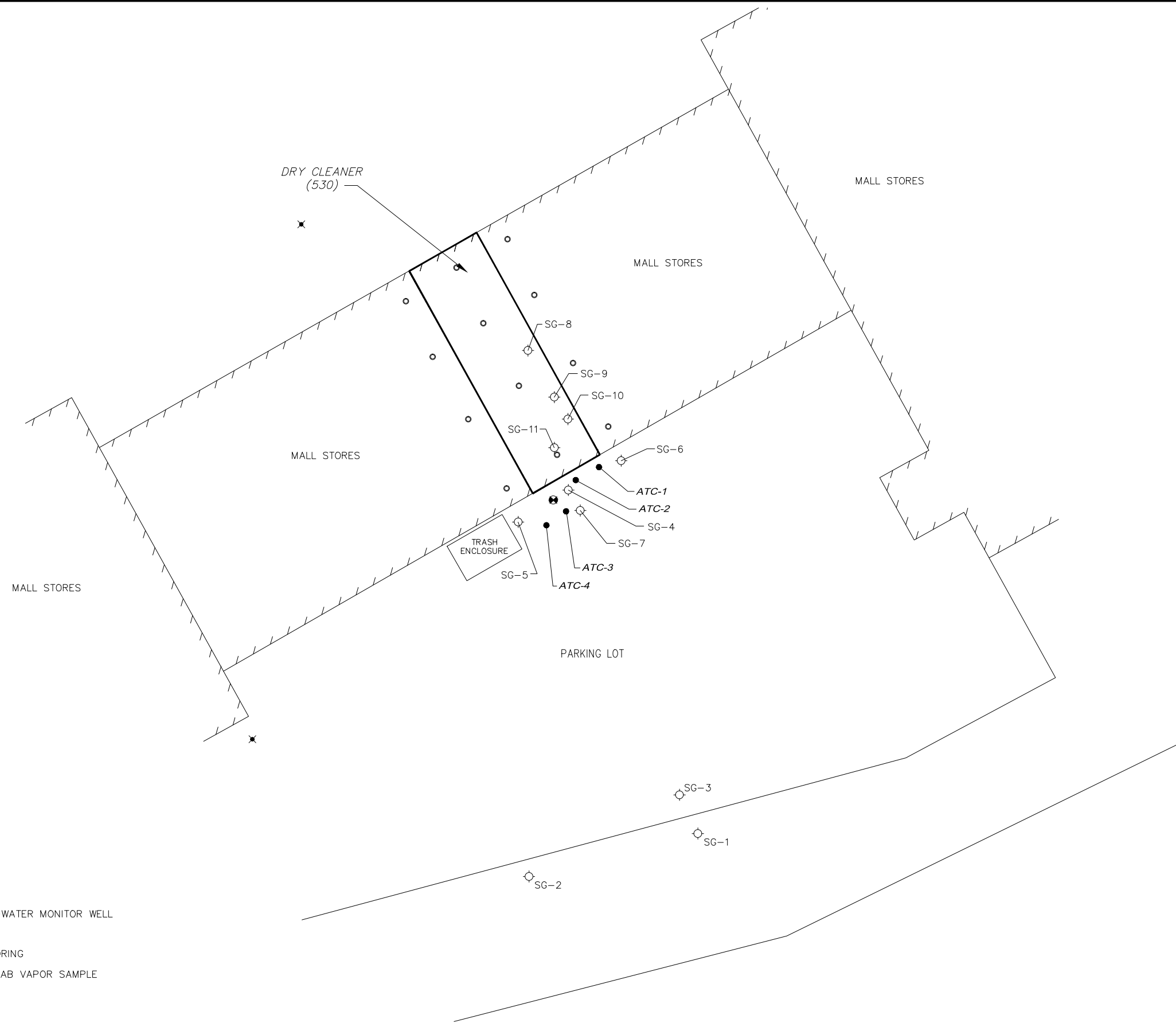
NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

**SITE PLAN**  
 580 MARKET PLACE  
 3735 - 4065 E. CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CA

PROJECT NUMBER: 75.75354.0002	DATE: 11/21/12	FIGURE
APPROVED BY: GS	DRAWN BY: BK	<b>2</b>
 701 University Avenue, Ste. #200 Sacramento, California 95825 Ph: (916) 923-1097 *** Fax: (916) 923-6251		

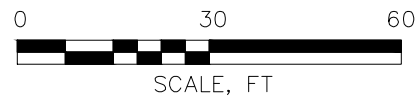
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**LEGEND**

- SOIL BORING
- ⊗ PROPOSED GROUNDWATER MONITOR WELL
- SOIL GAS SAMPLE
- ✕ PROPOSED SOIL BORING
- PROPOSED SUB-SLAB VAPOR SAMPLE



NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

**PROPOSED SOIL BORING, GROUNDWATER MONITORING WELL  
AND SOIL GAS PROBE LOCATION MAP**  
580 MARKET PLACE  
3735 - 4065 E. CASTRO VALLEY BOULEVARD  
CASTRO VALLEY, CA

PROJECT NUMBER: 75.75354.0002	DATE: 11/21/12	FIGURE
APPROVED BY: GS	DRAWN BY: BK	<b>3</b>
 701 University Avenue, Ste. #200 Sacramento, California 95825 Ph: (916) 923-1097 *** Fax: (916) 923-6251		

# WEINGARTEN REALTY

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Cardno ATC  
701 University Drive m Suite 701  
Sacramento, CA 95825

**Reference: Data Gap Work Plan  
580 Market Place Shopping Center  
3735-4065 East Castro Valley Boulevard  
Castro Valley, California  
Alameda County LOP No. RO 3047  
Cardno ATC Project No. 75.75354.0002**

Dear Mr. Stivala:

I have reviewed and approved the referenced report. Please submit it to the regulatory agencies listed in the distribution section of the report. Should any of the agencies require it, I am prepared to declare, under penalty of perjury, that to the best of my knowledge, the information contained in the report is true and correct.

Sincerely,



Charles Gurney

Weingarten Realty Investors

2600 Citadel Plaza Drive, Suite 300

Houston, Texas 77008

Date: 12-7-12

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