PES Environmental, Inc.
Engineering & Environmental Services

September 26, 2014

1098.007.01.001

A Report Prepared for:

Regis Homes Bay Area, LLC
Attention: Mr. Dave Hopkins
901 Mariners Island Boulevard, #700
San Mateo, California 94404

For Submittal to Oversight Agency:

Alameda County Water District
43885 South Grimmer Blvd.
P.O. Box 5110
Fremont, California 94537-5110

Received by: _____
Date: _____

Subject: Work Plan for Limited Site Investigation
39155 and 39183 State Street
Fremont, California

Dear Mr. Hopkins:

This *Work Plan for Limited Site Investigation* (Work Plan) has been prepared by PES Environmental, Inc. (PES) on behalf of Regis Homes Bay Area, LLC (REGIS) for the currently vacant properties at 39155 and 39183 State Street in Fremont, California (the site or subject property). The site location is shown on Plate 1, and the subject property and vicinity are shown on Plate 2. PES is not aware of any sources of contamination at the site. PES understands REGIS is considering acquisition of the site from the current owner, the City of Fremont, and that the proposed work is a component of environmental due diligence.

PROPOSED SCOPE OF WORK

The scope of work for the investigation includes the following activities: (1) field preparation tasks; (2) collection and analysis of soil, grab groundwater, and shallow soil vapor samples; and (3) submittal of laboratory analytical reports.

Field Preparation Activities

The following activities will be performed prior to the commencement of field sampling activities:

- Prepare a Site-specific Health and Safety Plan in accordance with applicable occupational safety and health requirements;

- Obtain drilling permits from Alameda County Water District (ACWD);
- Contact Underground Services Alert for public utility clearance;
- Retain and schedule drilling and laboratory subcontractors; and
- Perform utility clearances at sampling locations.

Field Investigation

General Procedures

Borehole drilling and sampling services will be provided by a licensed contractor possessing a valid C-57 water well contractor's license issued by the State of California, and in accordance with California Department of Water Resource Water Well Standards (Bulletin 74-90).

The soil, soil vapor, and grab groundwater sampling locations are shown on Plate 2. All subsurface investigation work will be conducted under the supervision of a California-registered geologist or engineer. A PES geologist or engineer will observe the borehole drilling and will prepare a lithologic log for select borings using the Unified Soil Classification System. Soil samples will be field screened for volatile organic compounds (VOCs) using a photoionization detector (PID), and the PID readings will be recorded on the lithologic log. Soil sampling depths and analyses may be modified based on the results of field screening, observations of changes in lithology, or visual or olfactory indications.

Filled soil and groundwater sample containers will be labeled for identification and immediately placed in a chilled, thermally insulated cooler (containing either bagged ice or blue ice) and delivered under chain-of-custody protocol to the project laboratory. Analysis of the samples will be performed on a standard one-week turn-around time by a California state-certified laboratory.

To reduce the potential for cross-contamination between sampling locations, downhole drilling and sampling equipment will be thoroughly cleaned prior to initiating work and between sampling locations. Sampling equipment will be washed in a dilute Alconox (or equivalent) solution, rinsed with potable water, and final rinsed with distilled water between each sampling location. Direct-push drilling equipment will be decontaminated as necessary with a high-pressure hot water wash between sampling locations.

Soil cuttings and decontamination fluids will be temporarily stored on-site pending characterization and proper off-site disposal. Upon completion of sampling activities, each

borehole will be grouted to the surface using neat cement under the oversight of ACWD staff. A tremmie pipe will be utilized in deeper borings.

Soil Vapor Sampling Methodology and Procedures

Soil vapor sampling procedures will be consistent with the most current guidance document: *Advisory - Active Soil Gas Investigations,* published by the California Environmental Protection Agency (Department of Toxic Substances Control (DTSC), California Regional Water Quality Control Board – Los Angeles Region, and RWQCB – San Francisco Region), dated April 2012. (Cal EPA, 2012). Prior to sampling, PES will verify that no significant rainfall event (of greater than 0.5 inches, as described in the *Advisory*) had occurred within a five–day period of the soil vapor sampling event.

Soil gas samples will be collected at a depth of 5 feet below ground surface (bgs) at each boring location. Soil vapor will be obtained using a Geoprobe-type sampling device outfitted for soil vapor sample collection. Soil vapor samples will be collected by installing a 1-inch diameter, hollow, stainless-steel soil vapor probe to the required sampling depth. The probes will be equipped with a hardened, reverse-threaded steel tip. The probe will be driven using the hydraulic direct-push rig. A hydrated bentonite seal will be placed around the rods to minimize the potential for ambient air entering the sample. Upon reaching the desired depth, a continuous length of inert 1/4-inch outer diameter polypropylene Nylaflow® tubing will be inserted down the center of the probe and threaded onto the sampling port. The probe will be then raised approximately 4 inches to expose the soil vapor sampling ports.

To allow for the subsurface to equilibrate to representative conditions following probe placement with the direct-push method, a two-hour equilibration period will be allowed prior to conducting the respective purge volume test and soil vapor sampling.

Leak testing will be conducted during the collection of soil vapor samples to evaluate the integrity of the sample and the potential for atmospheric leakage of ambient air. Leak testing will be performed using 2-propanol applied to a towel which will be fitted around the probe at the surface while purging.

After reaching the specified sampling depth of 5 feet bgs and installing the soil gas sampling equipment as described above, soil vapor will be withdrawn from the inert tubing using a syringe connected via a three-way valve. The purge volumes of the sampling tubing and void within the bottom of the exposed portion of the soil gas probes will be calculated. A purge volume versus contaminant concentration test will be performed at the first sampling location prior to collection of the first field sample to determine the appropriate volume of vapor to be purged from each probe installation prior to sample collection. The appropriate purge volume will be selected based on the highest concentration of VOCs.

Soil Vapor Analyses

Soil vapor samples will be analyzed by an on-site mobile laboratory (California-certified for the specified analyses) for VOCs by U.S. Environmental Protection Agency (U.S. EPA) Test Method 8260B.

Soil Sampling Methodology and Procedures

Ten (10) soil borings will be advanced across the site to a depth of 5 feet bgs. The soil borings will be sampled at two depth intervals (e.g., 1 to 2 feet bgs and 3 to 4 feet bgs) for chemical analysis. The deeper soil sample will be put on hold at the laboratory pending the results of the shallow soil sample analysis.

Continuous soil cores will be collected by driving a 4-foot long by 2-inch outside-diameter open tube sampler into undisturbed soil. The open-tube sampler will be lined with one 4-foot long, clear acetate sample sleeve. Soil samples will be collected in the acetate sample sleeve. The acetate sample sleeve will be cut at the appropriate depth interval into a 6-inch long section, and sealed with Teflon liners and plastic end caps to prevent moisture and/or contaminant loss.

Soil Sample Analyses

Shallow soil samples will be analyzed for organochlorine pesticides by U.S. EPA Test Method 8081 and total lead and arsenic by U.S. EPA Test Method 6010.

Groundwater Sampling Methodology and Procedures

Grab groundwater samples will be collected at six (6) locations. Depending on the depth at which shallow groundwater is first encountered, grab groundwater borings will be advanced to a depth of approximately 30 feet bgs using direct push methodology (i.e., approximately 3 to 5 feet below the anticipated depths of first-encountered groundwater). Once the target depth is reached, approximately 5 to 10 feet of nominal 0.75-inch diameter PVC well screen or pre-packed well screen, and 20 to 25 feet of nominal 0.75-inch diameter PVC blank casing will be placed inside the boring. The position of the screened interval will be selected such that it intersects the top of the saturated zone in each boring, as identified during drilling. Groundwater samples will be collected from inside the PVC casing using a small diameter stainless steel or disposable polyethylene bailer. The grab groundwater samples will then be immediately decanted from the bailer into appropriate laboratory-supplied sample bottles, which will be slowly filled in a manner to minimize sample disturbance and potential headspace or air bubbles in the sample bottle.

Groundwater Sample Analyses

Groundwater samples will be analyzed as follows: (1) total petroleum hydrocarbons quantified as gasoline (TPHg) by U.S. EPA Test Method 8015-modified; (2) total petroleum hydrocarbons quantified as diesel (TPHd), and motor oil (TPHmo) by U.S. EPA Test Method 8015-modified with a silica gel cleanup; and (3) VOCs by U.S. EPA Test Method 8260.

REPORTING AND SCHEDULE

As required by ACWD, copies of the final laboratory analytical reports will be transmitted to ACWD within 30 days of receipt.

We trust that this is the information you require at this time. Please call either of the undersigned if you have any questions.

Yours very truly,

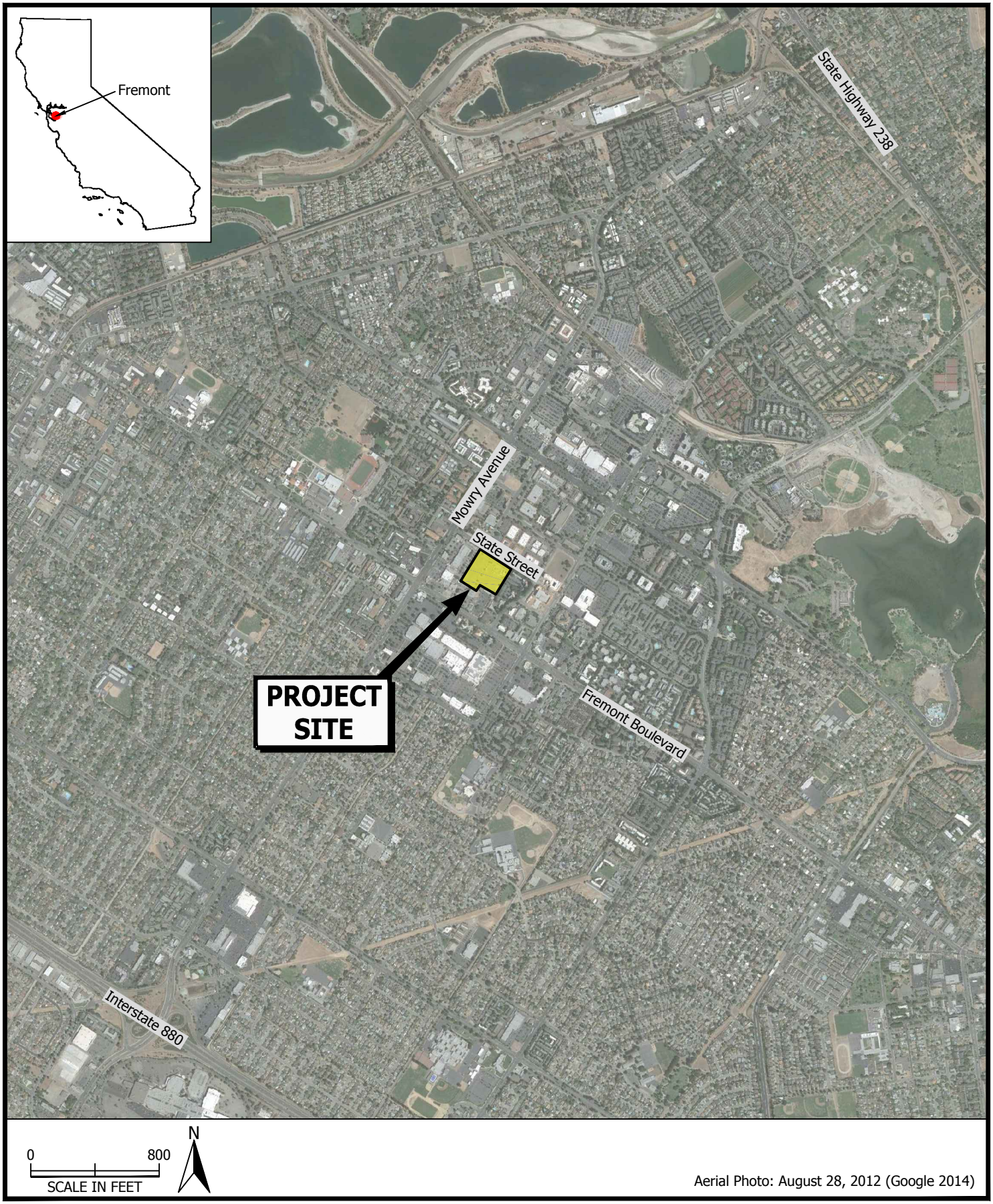
PES ENVIRONMENTAL, INC.

Justin J. Patterson
Project Environmental Scientist

Carl J. Michelsen, P.G., C.HG.
Principal Geochemist

Attachments: Plate 1 – Site Location
Plate 2 – Site Plan and Proposed Boring Locations

PLATES



Aerial Photo: August 28, 2012 (Google 2014)

PES Environmental, Inc.
Engineering & Environmental Services

Site Location
39155 and 39183 State Street
Fremont, California

PLATE
1

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JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Explanation

- Approximate Property Boundary
- Proposed Soil Vapor and Soil Sampling Location
- Proposed Soil Vapor and Grab Groundwater Sampling Location
- Proposed Soil Vapor Sampling Location

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PES Environmental, Inc.
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Site Plan and Proposed Sample Locations
39155 and 39183 State Street
Fremont, California

PLATE
2

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JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE