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By Alameda County Environmental Health 8:59 am, May 06, 2016

411 W. MacArthur LLC
650B Fremont Ave #375
Los Altos, CA 94024
415-705 9922
Email: joehernon@gmail.com

To ACEH.

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.

Regards,

Joseph A. Hernon. (Manager)
411 W. MacArthur LLC.



5/4/16.



Applied Remedial Services, Inc.

April 1, 2016

Keith Nowell
Dilan Roe
Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Brief Investigative Workplan
411 W. MacArthur Boulevard, Oakland, California
ACEH RO#0003192; Global ID: T10000007937

Dear Keith and Dilan:

ARS is pleased to submit this brief workplan on behalf of Joe Hernon for the planned residential development at 411 West MacArthur Boulevard in Oakland, California (Site). Based on our meeting yesterday, March 30, 2016, this workplan proposes: (1) The collection of groundwater samples from three soil borings on the west side of the Site; and (2) The collection of soil gas samples from these three locations on the west side of the Site. The goal of these activities will be to assess potential indoor air risks relative to the planned residential and commercial development on the Site.

Proposed Scope of Work

In order to provide additional data necessary to evaluate potential indoor air vapor intrusion concerns, we propose to conduct the following tasks. All activities will be conducted in accordance with applicable regulatory guidelines and protocols.

- **Task 1 Collect three groundwater samples.** Three soil borings, GW-1, GW-2, and GW-3, will be drilled to collect one groundwater sample from each boring. Prior to conducting field activities, boring permits will be obtained from Alameda County Public Works and USA will be notified.

The three borings will include one boring, GW-1, in the planned location of the elevator pit, on the south side of the Site, and two borings, GA-2 and GA-3, just west of the former UST excavation cavity, on the west side of the Site (see Figure 1). Each boring will be drilled to approximately three to four feet below first-encountered groundwater (groundwater expected at approximately 17 feet in depth) and will be logged by a qualified professional.

After reaching boring total depth, ¾-inch diameter PVC well casing will be placed in the boring, and approximately 1 to 3 gallons of water will be purged from the PVC casing prior to sampling. Groundwater will be sampled and preserved in accordance with standard sampling protocols, and samples will be transported to the analytical laboratory under formal chain-of-custody. Borings will be grouted in accordance with ACPW permit requirements, and drilling and sampling equipment will be thoroughly decontaminated between each boring. Three groundwater samples (one per boring) will be analyzed for TPH-G, BTEX, and Naphthalene using USEPA Method 8260.

- **Task 2 Collect three soil gas samples.** Three soil gas samples, SG-1, SG-2, and SG-3, will be collected. The three samples will include one sample, SG-1, in the planned elevator pit area, and two samples, SG-2 and SG-3, just west of the former UST excavation cavity, on the west side of the Site (see Figure 1). The three soil gas samples will be collected at approximately five feet beneath the planned building foundation depth; thus, respective soil gas sampling depths for SG-1, SG-2, and to SG-3 will be 20 feet, 6 feet and 6 feet. Note that for SG-1, if groundwater is shallower than 20 feet in depth, then the soil gas sample depth will be raised to approximately two feet above the groundwater depth, and this change will be noted in field notes and in the final report.

Temporary vapor wells will be constructed as follows: (1) After coring to the desired depth using direct-push coring equipment, a vapor tip with ¼-inch diameter Teflon (or similar) tubing will be set at the desired depth; (2) Filter sand will be placed around the vapor tip, with sand approximately six inches below and six inches above the vapor tip; (2) A one foot bentonite seal, consisting of six inches of dry granular bentonite followed by six inches of pre-hydrated granular or pellet bentonite, will be placed above the filter sand; and (3) The remaining annulus was filled with hydrated pellet bentonite.

The three temporary soil gas wells will be purged and sampled in accordance with current DTSC protocols as follows:

- Soil vapor samples will not be collected within 72 hours following a significant (>0.5 inches rain) precipitation event.
- A “T” valve will be placed in line at the ground surface to allow for system purging and for pressure testing of the above ground portion of the sampling train. The sampling tubing will be attached to a 200-milliliter per minute maximum flow controller, then a one liter laboratory-supplied Summa Canister™ (evacuated to 29 inches mercury vacuum) with vacuum pressure valve.
- After allowing the vapor wells to equilibrate for at least one hour, the wells will be purged and sampled. A laboratory supplied purge/pressure test Summa Canister™ (evacuated to 29 inches mercury) will then be used to test vacuum pressure in the above ground portion of the sampling train. Sampling train vacuum pressure will be

maintained for at least 10 minutes; if pressure drops occur, the system connections will be tightened and the pressure testing continued.

- The vapor well will then be purged of approximately three purge volumes using a dedicated Summa Canister.
- The entire probe and sampling train will be placed under a shroud and a leak test will be conducted. Helium from a compressed gas cylinder will be pumped into the shroud, and the helium concentration inside the shroud will be maintained at approximately 10,000 ppmV (the detection level for the ASTM Method D-1946 is 100 ppmV). Helium monitoring will be conducted using a Mark Radiodetection MGD-2002 helium detector with internal pump (or equivalent). For the sampling train leak test, the helium monitor will be attached to the purge tube and the T-valve opened. A positive reading of helium by the detector will indicate the presence of helium inside the sample train and, therefore, a leak in the sample train. If helium is detected, all connections in the sample train will be tightened and the leak test repeated until no helium was detected.
- The vapor sample will then be collected by opening the Summa canister and allowing the vapor to fill the canister until the vacuum pressure in the canister reaches approximately 20 percent of initial (approximately 5 to 6 inches mercury). The flow controller will be used so that the Summa Canister will fill slowly (200 ml per minute or less) to insure a representative soil vapor sample. Prior to, at start time, and during sampling, periodic vacuum measurements will be recorded on a field data sheet, and initial and final vacuum pressures will be noted on chain-of-custody records.
- The vapor samples (filled Summa canisters) will be secured and transported to SunStar Laboratories, a certified analytical laboratory, under formal chain-of-custody.

The three soil gas samples will be analyzed for TPH-G, BTEX, and Naphthalene using USEPA Method TO-15, and for fixed gases (including oxygen, carbon dioxide, nitrogen, and helium) using ASTM Method D1946-90. These data will help to evaluate potential indoor air threats from underlying hydrocarbon contaminants.

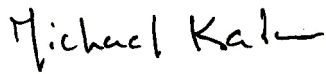
- **Task 3 Prepare summary report of findings.** A brief letter report summarizing investigative methods and results will be prepared. This letter report will include tabulated groundwater and soil vapor results and graphical representations of investigative data.

Project Schedule

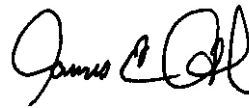
Subject to Alameda County Department of Environmental Health approval, we anticipate completion of proposed investigative field work on April 8, 2016, and submittal of a draft letter report by April 18, 2016.

We appreciate this opportunity to provide this workplan for your review. Please contact us if there are questions or if additional information is required.

Sincerely,



Michael Kara
Principal Toxicologist



James E. Gribi
Professional Geologist
California No. 5843



Enclosure

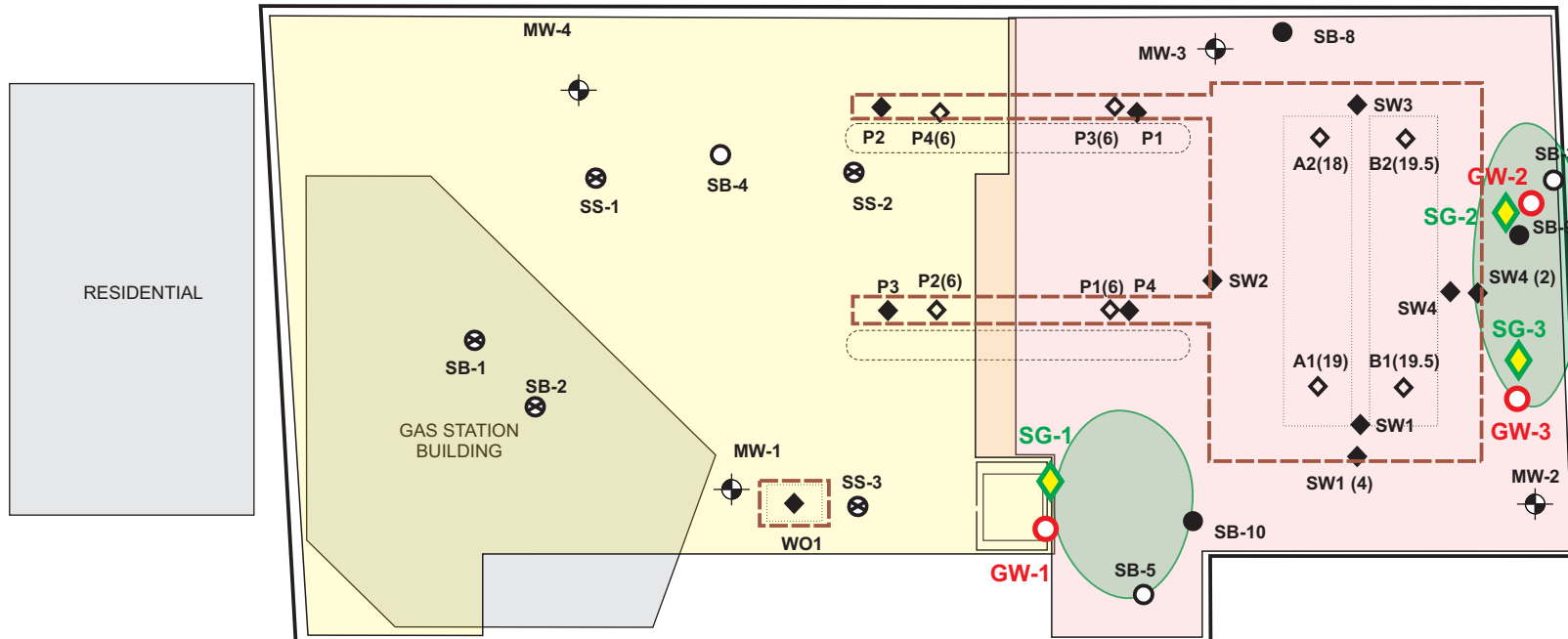
Cc: Mr. Joe Hernon, Hernon Group

FIGURES



WEST MACARTHUR BOULEVARD

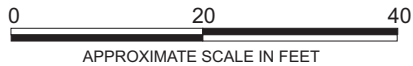
WEBSTER STREET



- ◇ - UST REMOVAL SOIL SAMPLE, 09/1998
- ◆ - UST REMOVAL SOIL SAMPLE, 07/1989
- ⊗ - SOIL BORING LOCATION (SLR, 2014)
- - SOIL BORING LOCATION (DELTA, 2010)
- - SOIL BORING LOCATION (TRC, 2006)
- ⊕ - GROUNDWATER MONITORING WELL LOCATION

- ◇ (green) - PROPOSED SOIL GAS SAMPLE LOCATION
- (red) - PROPOSED GROUNDWATER SAMPLE LOCATION

- (pink) - COMMERCIAL/RETAIL SUITE ON GROUND FLOOR, 14 FEET CEILING.
- (yellow) - BASEMENT, CAR STACKER & MECH./STORAGE, 9 FEET CEILING; PARKING ON GROUND FLOOR, 14 FEET CEILING.



| | |
|--------------------------|----------------|
| DESIGNED BY: JG | CHECKED BY: MK |
| DRAWN BY: JG | SCALE: |
| PROJECT NO: ARS-16-29-01 | |

PROPOSED GROUNDWATER & SOIL GAS SAMPLE LOCATIONS
 411 W. MAC ARTHUR BLVD.
 OAKLAND, CALIFORNIA

DATE: 03/31/2016 FIGURE: 1

