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By Alameda County Environmental Health at 2:15 pm, Oct 25, 2013

October 24, 2013

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



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**Re: Data Gap Investigation Workplan
6501 Shattuck Avenue, Oakland, California
Fuel Leak Case No. RO0003066**

Dear Ms. Detterman:

SOMA has prepared this letter workplan in response to your email directive dated October 4, 2013. To further characterize the vertical extent of potential impact of volatile organic compounds (VOCs), poly-aromatic hydrocarbons (PAHs) and CA LUFT-5 metals (cadmium, chromium, zinc, nickel, lead) downgradient of the former waste oil underground storage tank (UST), SOMA proposes advancing one soil borehole (B-10) at the site, adjacent to the former waste oil UST location.

Pre-Drilling Activities

Prior to initiating all field assessment activities, SOMA will obtain required drilling permits from Alameda County Public Works Agency (ACPWA). Furthermore, a site-specific HASP according to Occupational Safety and Health Administration (OSHA), "Hazardous Waste Operation and Emergency Response" guidelines (29 CFR 1910.120) and the California Occupational Safety and Health Administration (Cal/OSHA) "Hazardous Waste Operation and Emergency Response" guidelines (CCR Title 8, section 5192) will be prepared and implemented prior to initiating field activities.

SOMA will mark boring location and notify Underground Service Alert (USA) to verify that drilling areas are clear of underground utilities. Following USA clearance, SOMA will retain a private utility locator to survey proposed drilling area and locate any additional subsurface conduits.

Soil Borings Advancement

Proposed boring B-10 (Figure 1) will be advanced using DPT techniques. DPT is an efficient method of collecting continuous soil cores while preventing cross-contamination. Boring B-10 will be advanced to at least 15 feet bgs. The final boring depth will be determined depending on the encountered lithology and detection of contamination.

Encountered subsurface lithologies will be recorded on the geologic borehole logs. On boring logs SOMA will indicate percent gravel, sand, silt, and clay. At each interval of depth-discrete soil sampling, the DPT drilling rig will obtain a 4-foot soil core sample. The contents of each sediment-filled tube, collected from the entire 7 to 15 ft interval, will be screened using a PID. Vapors from the soil core samples will be screened for volatile compounds and documented on geologic borehole logs.

SOMA proposes that soil samples be collected at one foot intervals beginning at 7 feet bgs (previous excavation extended to 7 feet under the tank). A minimum of three soil samples will be collected between 7 and 15 feet bgs, including a sample at the bottom of the boring. Exact depths for samples and determination of the final boring depth will be selected on the basis of locations of elevated PID (greater than 25 ppmv) or where visual or olfactory observations indicate the presence of significant soil contamination.

Laboratory analysis will be performed on all samples with elevated PID or other evidence of impact. If no indications of elevated PID or other field evidence of impact are observed in the soil samples collected, laboratory analysis will be conducted on three soil samples spaced at roughly 3 foot intervals (ex: 8 ft, 11 ft and 14 ft). SOMA's field geologist will select and sample sediments in 6-inch-long sampling tubes and cap both ends of each sample with a Teflon liner and polyethylene end caps. The samples will be labeled with a unique identifier and immediately placed into a chilled ice chest for transportation to a California state-certified environmental laboratory for analysis.

SOMA will also collect a groundwater sample from boring B-10. To collect a groundwater sample, the field crew will use a disposable bailer and decant the groundwater into the appropriate sampling bottle. Following soil and groundwater sampling, the boring will be abandoned with a neat cement grout mixture and completed at the surface with materials to match existing grade.

Laboratory Analysis

Groundwater and soil samples will be submitted to a California state-certified environmental laboratory under the appropriate sample handling protocol for analysis of the following:

- Full List VOCs using method 8260
- CA LUFT-5 Metals
- PAHs using method EPA 8310

Waste Disposal

Soil and wastewater generated during boring activities will be temporarily stored on-site in separate DOT-rated, 55-gallon steel drums pending characterization, profiling, and transportation to an approved disposal/recycling facility. Waste manifests will be made part of the subsequent report.

Report Preparation

SOMA will prepare a report that will include the following:

- A description of field activities and boring logs,
- Laboratory analytical reports and results of investigation;
- Recommendations for additional assessment activities, if warranted or request for No Further Action.

This workplan will be implemented upon receipt of written authorization from the ACEH. If you have any questions or comments concerning the above, please do not hesitate to call me at (925) 734-6400.

Sincerely,



Mansour Sepehr, PhD, PE
Principal

cc: Mr. Athan Magganas

Attachments:

General Field Procedures

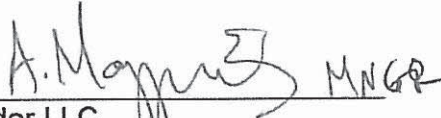
Figure 1: Site Map Showing Proposed Boring Location



PERJURY STATEMENT

Site Location: 6501 Shattuck Avenue, Oakland, California
Data Gap Investigation Workplan

"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".

 MNGR

Bruder LLC
Athan Magganas
2550 Appian Way, Suite 201
Pinole, California 94564

10/24/13

GENERAL FIELD PROCEDURES

Utility Locating

Prior to drilling, boring locations are marked with white paint or other discernible marking and cleared for underground utilities through Underground Service Alert (USA). In addition, the first five feet of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the borehole location for underground structures or utilities.

DPT Borehole Advancement

Pre-cleaned push rods (typically one to two inches in diameter) are advanced using a hydraulic push type rig for the purpose of collecting samples and evaluating subsurface conditions. The drill rod serves as a soil sampler, and an acetate liner is inserted into the annulus of the drill rod prior to advancement. Once the sample is collected, the rods and sampler are retracted and the sample tubes are removed from the sampler head. The sampler head is then cleaned, filled with clean sample tubes, inserted into the borehole and advanced to the next sampling point where the sample collection process is repeated.

Borehole Completion

Upon completion of drilling and sampling, the rods are retracted. Neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, is introduced, *via* a tremmie pipe, and pumped to displace standing water in the borehole. Displaced groundwater is collected at the surface into DOT approved 55-gallon steel drums, or an equivalent storage container. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finished grade.

Equipment Decontamination

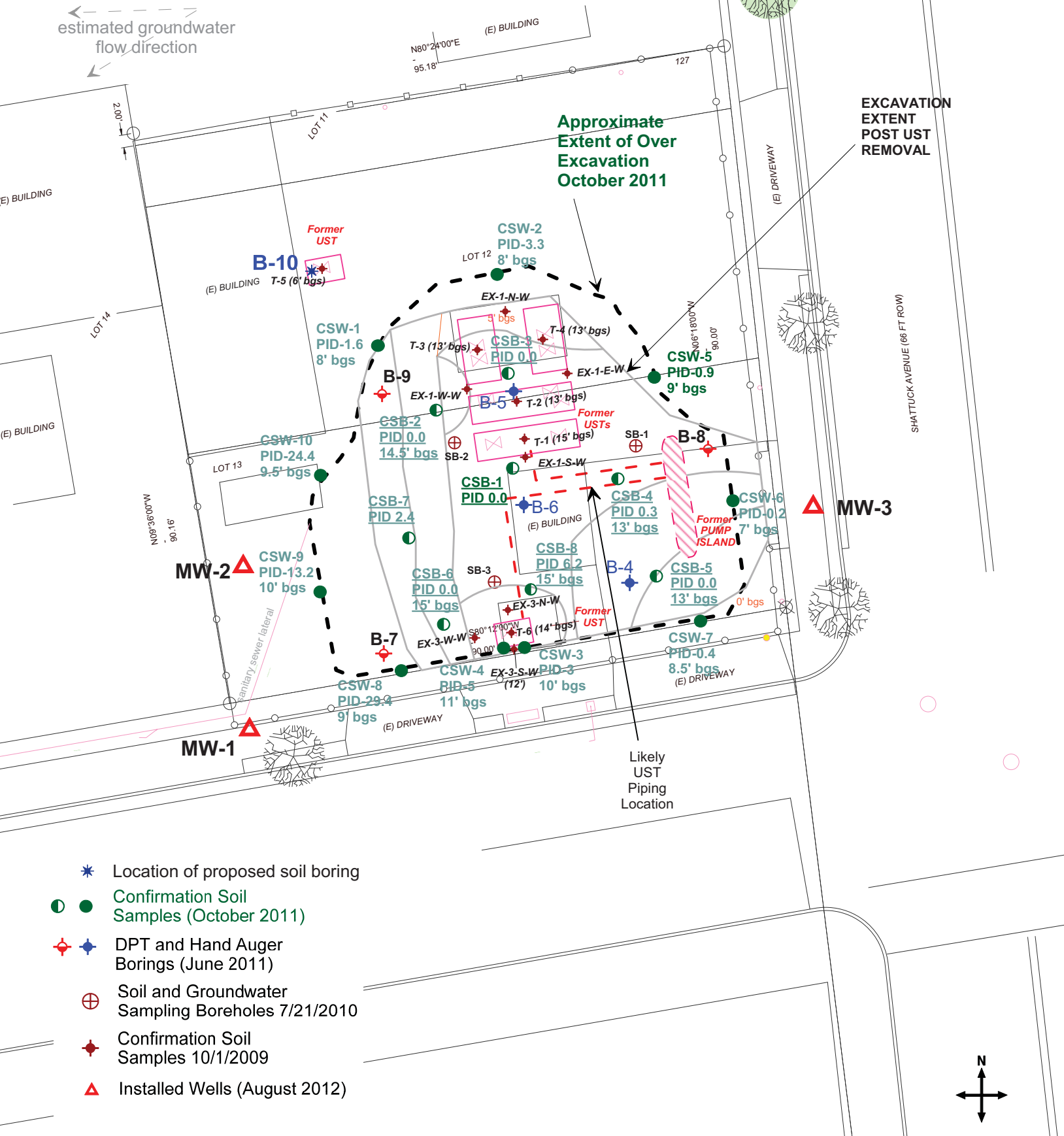
Equipment that could potentially contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drill augers and other large pieces of equipment are decontaminated using high pressure hot water spray. Samplers, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

2996 SHATTUCK AVENUE-
groundwater flow predominantly
westerly, DTW 2.3-8.5' bgs

6407 TELEGRAPH-
groundwater flow southwest,
DTW 5-8' bgs

← estimated groundwater
flow direction



- * Location of proposed soil boring
- Confirmation Soil Samples (October 2011)
- ◆ DPT and Hand Auger Borings (June 2011)
- ⊕ Soil and Groundwater Sampling Boreholes 7/21/2010
- ◆ Confirmation Soil Samples 10/1/2009
- ▲ Installed Wells (August 2012)

approximate scale in feet



Figure 1: Site map showing proposed boring location