SCHUTZE & ASSOCIATES, INC

44358 S. GRIMMER BOULEVARD, FREMONT, CA 94538 ◊ TELEPHONE: (510) 226-9944 ◊ FAX: (510) 226-9948

August 27, 2015
Project No. SCS539
Geotracker Global ID T10000006756
ACHCS Fuel Leak Case: RO0003170

RECEIVED
By Alameda County Environmental Health 9:09 am, Aug 28, 2015

1607 2nd Avenue, LLC
Attn: Harry Tung

Reference: **Apartment Building and Former Heating Oil Tank Site**
1607 2nd Avenue
Oakland, Alameda County, California

Subject: **Perjury Statement for Work Plan for Subsurface Investigation**

To Alameda County Environmental Health:

PERJURY STATEMENT

I declare, under penalty of perjury, that I have read the below-referenced document and the information and/or recommendations contained in this document is true and correct to the best of my knowledge.

- SCHUTZE & Associates, Inc. August 27, 2015, Work Plan for Subsurface Investigation, 1607 2nd Avenue, Oakland, CA 94606, Job #SCS539

Signed,

RP Signature

Harry T Tung
RP Printed Name

8/27/2015
Date

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Alameda County Environmental Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
Attn: Mr. Keith Nowell, PG, CHG

1607 2nd Avenue, LLC
4096 Piedmont Avenue, #150
Oakland, CA 94611
Attn: Alfred Tung

Richard L. & Linda M. Weinstein Trust et al.
360 17th Street, #204
Oakland, CA 94612
Attn: Richard Weinstein

Latwuania Rogers
360 17th Street, #204
Oakland, CA 94612

RGG LLC et al.
360 17th Street, #204
Oakland, CA 94612

Reference: **Apartment Building and Former Heating Oil Tank Site**
1607 2nd Avenue
Oakland, Alameda County, California

Subject: **Work Plan for Subsurface Investigation**

Dear Ms. Rogers, Mr. Nowell, Mr. Tung and Mr. Weinstein:

SCHUTZE & Associates, Inc. is pleased to present this Work Plan for the above-mentioned property (subject site) in response to a directive letter received from the Alameda County Environmental Health (ACEH) Care Services dated June 8, 2015. The subject site, a currently occupied apartment building which formerly had an underground storage tank (UST) adjacent to the west of the building, is located at 1607 2nd Avenue in Oakland, Alameda County, California.

This Work Plan discusses the directives set forth by ACEH for the subject site in regards to (1) Delineation of the extent of contamination in conjunction with the State Water Resources Control Board (SWRCB) Low Threat Underground Storage Tank Case Closure Policy (LTCP) and the SWRCB Leaking Underground Fuel Tank Guidance Manual (LUFT Manual)[1]; and (2) providing details of additional activities required to eventually achieve case closure in accordance with low-threat closure

[1] California State Water Resources Control Board, Leaking Underground Fuel Tank Guidance Manual, September 2012

criteria. Anticipated subsurface investigations and corrective actions are discussed herein.

The work proposed in this document will be supervised by a California Professional Geologist (P.G.) and will be conducted under ACEH oversight. Documents pertaining to investigation and remedial activities, including Environmental Investigations and tank removal reports, for your site will be uploaded to the ACEH ftp and the SWRCB GeoTracker websites. In addition, it is recommended to complete an application to the California Underground Storage Tank Cleanup Fund (USTCF).

A. SUBSURFACE CONDITIONS AND GEOLOGY

The City of Oakland is located in California's Central Coast Ranges Geomorphic Province. This region is characterized by a series of parallel, northwesterly trending mountain chains and valleys consisting primarily of Mesozoic and Cenozoic sedimentary rocks.

A depression containing the San Francisco Bay separates the Peninsular Ranges from the East Bay Ranges. Most of Oakland lies in this depression and the area of Oakland surrounding Lake Merritt is underlain by Pleistocene marine terrace deposits, dune sands (Merritt Sand) and artificial fill that have been laid down over estuarine mud (Bay Mud). The thickness of the Pleistocene sediments is estimated to be approximately 50 feet below ground surface (ft bgs).

Groundwater at the site is between 10 and 15 ft bgs. Groundwater flow direction has been estimated as to the southwest.

B. BACKGROUND[2]

B.1 Site History

One UST containing heating oil was located beneath the sidewalk along the East 16th Street frontage of the property. The tank had a capacity of approximately 1,500 gallons, measuring approximately 10 ft in length by 5 ft in diameter, and was constructed of single wall bare steel. The fill port was located at the east end of the tank. The age of the tank is unknown. The owner had no prior knowledge of the tank nor is there any indication of previous site investigation activities. The approximate location of the tank as well as nearby streets are shown on the attached Figure 1.

B.2 Tank Removal

In October 2014, Golden Gate Tank Removal, Inc. (GGTR) applied for and obtained permits for the tank removal activities from the City of Oakland Fire Department (OFD) and City of Oakland Planning and Building Department (OPB). On November 13, 2014, GGTR began work on the project. The concrete sidewalk and soil covering the tank

[2] Golden Gate Tank Removal, Inc. December 11, 2014, Underground Storage Tank Closure Report, 1607 2nd Avenue, Oakland, CA 94606, Job #9464

were removed. Field measurements indicated that the bottom of the tank was 9 ft bgs. The vent and product piping were removed. GGTR pumped residual product from the tank, scraped and triple rinsed the interior of the tank, and transported the rinsate (totaling 1,550 Gallons) under manifest procedures to a certified disposal site.

On November 17, 2014, with an inspector of the OFD present, the UST was pulled. After a visual inspection, the tank was loaded into a truck and transported to Circosta Iron & Metal, Inc. for recycling.

B.3 Tank and Soil Condition

The tank was found to be in poor condition with visible holes. Soil discoloration and hydrocarbon odors were observed in the tank overburden soil and/or in the soil beneath the tank. Soil observed during the UST removal was predominantly clay. No groundwater was observed in the excavation during tank removal activities. An Underground Storage Tank Unauthorized Release (Leak) / Contamination Site Report was required by the SFDPH due to holes observed in the tank.

B.4 Tank Sample Collection and Analysis

One four-point composite soil stockpile sample and two discrete soil samples two ft below the east and west ends of the tank were collected.

Samples were analyzed for Total Petroleum Hydrocarbons (TPH) as TPH (C10-C28) by EPA, Method SW846 8015B M, and Benzene, Toluene, Ethyl Benzene, Total Xylenes (BTEX), Naphthalene by EPA Method SW846 8260B. Additionally, the stockpile composite sample was analyzed for Total Lead by Method SW846 6010B.

A summary of the analytical results is included in the Table 1.

Table 1

Accutest Northern California, Inc., Nov 20, 2014				
Golden Gate Tank Removal **Project: 1607 2nd Avenue - Oakland, CA** **Date Sampled: 11/18/2014**				
Client Sample ID:	Soil	9464-E11'	9464-SP	9464-W11'
Lab Sample ID:	Soil	C37203-1	C37203-3	C37203-2
GC/MS Volatiles (SW846 8260B)				
Benzene	ug/kg	ND (0.50)	ND (20)	ND (0.50)
Toluene	ug/kg	ND (0.50)	ND (20)	ND (0.50)
Ethylbenzene	ug/kg	ND (0.50)	ND (20)	ND (0.50)
Xylene (total)	ug/kg	ND (1.0)	ND (40)	ND (1.0)
Naphthalene	ug/kg	ND (1.0)	345	8.7
GC Semi-volatiles (SW846 8015B M)				
TPH (C10-C28)	mg/kg	0.922 J	307	2.14 J
Metals Analysis				
Lead	mg/kg	-	5.7	-

B.5 Waste Management & Soil Disposal

Because of elevated concentration of TPH in the composite soil sample 9464-SP, GGTR disposed of the excavated overburden stockpile soil. The soil was profiled, manifested and disposed of at the Keller Canyon Landfill Facility located in Pittsburg, California.

B.6 Site Restoration

GGTR backfilled the excavation with the clean imported material. The soil was placed in 12" lifts and compacted using a jumping jack compactor. The sidewalk was subsequently replaced in conformance with OPB requirements.

B.7 Findings / Recommendation

There were visible holes in the tank, as well as visual evidence of contamination in the soil beneath the tank. Groundwater was not encountered in the excavation during the tank removal or sampling activities. The analytical results from the State Certified Laboratory following the tank removal and remedial activities were non-detect to insignificant and acceptable by the OFD; therefore, GGTR recommended no further action at the site.

B.1 Regulatory Oversight

In a letter by the ACEHS, dated June 8, 2015, the agency requested a Work Plan for further delineation of the contamination. The Work Plan was to be prepared in conjunction with the SWRCB's LTCP and the SWRCB's LUFT Manual.

It is the opinion of SCHUTZE & Associates, Inc. that a portion of the GGTR soil over-excavation costs and the costs incurred in this Work Plan, and potential work required by the ACEH after completion of this work would be reimbursable by the USTCF. SCHUTZE & Associates, Inc. has contacted the USTCF to inquire if the property can be accepted in the fund.

The subject site is listed on GeoTracker, the Water Board's on-line data storage website. SCHUTZE & Associates, Inc. is currently obtaining authorization to upload data and reports for the subject site to GeoTracker.

Reports and other environmental data will also be uploaded to the ACEH ftp site.

B.2 Comparison with the Low-Threat Closure Policy

The ACEH staff have compared the subject site with the criteria outlined in the State Water Board's LTCP and have concluded the following:

1) General Criteria: A conceptual site model has not been developed, including a potential receptor survey and a vertical and lateral extent of contamination.
2) Media Specific Criteria – Groundwater: Groundwater was not tested, therefore, the criteria are not met.

3) Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air: Soil vapors have not been tested and the presence or characteristics of a bioattenuation zone have not been established.

4) Media Specific Criteria – Direct Contact and Outdoor Air Exposure: Soil contamination in the upper ten ft bgs has not been investigated.

C. DETAILED SCOPE OF WORK

SCHUTZE & Associates, Inc. proposes the following scope of work based on the currently available data for the site.

C.1 File Review

SCHUTZE & Associates, Inc. will conduct an on-line file review for the site at the ACEH website. SCHUTZE & Associates, Inc. has also requested that the property owner search his files for additional records that may exist, especially additional UST removal records.

C.2 Soil Boring Investigation

SCHUTZE & Associates, Inc. recommends advancing five soil borings in and around the former fuel UST pit. The soil boring investigation will assist in (1) further determining the vertical and lateral extent of soil and groundwater contamination, (2) assessing the existence, thickness and characteristics of a bioattenuation zone, (3) providing preliminary data for the potential of vapor migration into indoor air, and (4) providing preliminary data for evaluating the potential of direct contact and outdoor air exposure.

The proposed tasks are as follows:

a. Subcontract with a licensed C-57 driller with Geoprobe equipment.

b. <u>Pre-field activities</u>:

- Submit a site plan, work plan, drilling contractor's credentials and permit application to Alameda County. Obtain any other required permits.
- Provide notification to the ACEH at least 48 hours prior to commencing work. Notify other agencies of the scheduled work, as required.
- Prepare and implement a site-specific Health and Safety Plan.
- Mark the proposed soil boring locations. Subsequently, Underground Services Alert (USA) and a private utilities locator shall be contacted to clear the proposed soil boring locations for underground utilities.
- Mobilize all necessary equipment and materials to perform the required services. These will include soil boring equipment, concrete coring tools, and asphalt cold patch or concrete.

c. Advance five soil borings to groundwater, 25 ft bgs or drill refusal. Groundwater is expected at 10 ft bgs, but may be confined to greater depths. If groundwater is not encountered, the borings may be advanced to greater depths, based on field conditions and available time.

    - Proposed borings B1 through B5 will be in, up-, cross- and down-gradient from the former heating oil tank pit.

    The proposed boring locations are depicted on Figure 1.

d. Recover the soil cores in 1.5-inch-diameter acetate liners to be observed by a SCHUTZE & Associates, Inc. staff geologist. Field-screen the recovered soil cores for VOCs using a portable photo ionization detector (PID). The field geologist will record data, observations and conditions during the field work. Boring logs will be prepared and included in the investigation reports. These logs will include lithologies encountered during drilling, samples collected, groundwater level, and well completion materials. Any visual sign of contamination or unusual odors will be noted in the boring logs.

e. Collect soil samples from each boring. The samples will be collected by cutting the interval of the soil core to be sampled and sealing each end with Teflon strips and plastic caps. Samples will be collected, at a minimum, within the following intervals, for the purpose of addressing the LTCP criteria:

    - Surface (0-1 ft, collected directly below the pavement);
    - Shallow soil (0-5 ft);
    - Deeper soil (5-10 ft bgs); and
    - Subsequent 5 ft intervals (as needed until the vadose zone has been encountered).

    Samples will also be collected as needed for the purpose of evaluating the presence, thickness and characteristics of a potential bioattenuation zone beneath the subject site. Additional soil samples may be collected based on PID readings, unusual odors and/or visible contamination.

f. Collect one groundwater sample from each boring, assuming that sufficient groundwater is encountered. Sample containers will be supplied by McCampbell Analytical, Inc. (CDPH ELAP[3] #1644) and will include 1-liter amber bottles containing hydrochloric acid as a preservative, 40-milliliter (ml) VOAs[4] containing hydrochloric acid as a preservative and 250 ml plastic bottles containing nitric acid as a preservative. Groundwater to be analyzed for metals will be filtered in the field via 0.45-micron inline filters. Quality Control groundwater samples will be collected as follows:

    - One duplicate sample will be collected and analyzed. One equipment blank will be collected to be analyzed only if analytical irregularities are

[3] California Department of Public Health Environmental Laboratory Accreditation Program
[4] Volatile organics analysis containers

observed. Trip blanks will be provided by the laboratory to be analyzed only if analytical irregularities are observed.

g. Store soil and groundwater samples in an ice-filled cooler to be transported following chain-of-custody procedures. Submit soil and groundwater samples to McCampbell Analytical, Inc. to be analyzed in accordance with the LUFT Manual for the following:

- TPH-d, -mo and -ho[5] (EPA[6] Method 8015B DRO and ORO[7] with Silica Gel Cleanup), obtain chromatograms;
- VOCs, incl. MBTEX[8], naphthalene and TBA[9] (EPA Method 8260B); and
- Priority pollutant PAHs[10] (EPA Method 8100 mod.)

Any samples not analyzed will be placed on hold for later analysis, if required. Soil sample results will be reported as dry-weight.

h. Backfill/waste disposal activities: As outlined in the preceding section.

i. Prepare a summary report for the ACEH including maps and cross-sections depicting the vertical and lateral extent of contamination and the thickness and characteristics of the bioattenuation zone, if present. Use the results of the soil boring investigations to recommend further action, if required, or low threat case closure. The following items may be included in summary report:

- Signature Page. A California licensed professional geologist will sign off on the report. Jurat, as required by ACEH.
- Presentation of Historical and Recent Site Data.
- Site plan with locations of all borings, wells, and other sampling points.
- If previous site assessment data exist, include maps and cross-section(s) showing the soil and bedrock characteristics, and the distribution of contaminants, in both soil and groundwater.
- Table(s) of soil analytical results (in mg/kg), with both recent and historical data in chronological order.
- Table(s) of groundwater analytical results (µg/L),
- Maps and/or cross-sections of soil and groundwater analytical results for different analytes. Estimated plume maps may be drawn to illustrate where data are extant and where there may be a lack of data.
- Boring logs and well logs. Description of the site-specific geology and hydrogeology, updated with the most recent investigative results.

[5] Total petroleum hydrocarbons as diesel, motor oil and motor oil
[6] Environmental Protection Agency
[7] DRO- Diesel Range Organics, ORO-Oil Range Organics
[8] Methyl tert-butyl ether, benzene, toluene, ethylbenzene and xylenes
[9] TBA t-Butyl alcohol
[10] Polycyclic aromatic hydrocarbons

- Preliminary and limited Conceptual Site Model (CSM), using the reults from the current phase of work as discussed in the report text.
- Description of Site Assessment Activities:
    - Investigative procedures used, including soil and groundwater sampling.
    - Description of locations and the number of all borings.
    - Analytical methods used.
    - Changes, if any, to the scope of work.
    - Decontamination procedures; and
    - Waste management and disposal procedures.

D. PERJURY STATEMENT

I declare, under penalty of perjury, that the information and/or recommendations contained in this document is true and correct to the best of my knowledge.

We are prepared to commence work immediately upon approval of the Work Plan by the client and ACEH. It is likely that financial aspects, including the acceptance of this project in the USTCF could be factors affecting the schedule of the work proposed in this Work Plan.

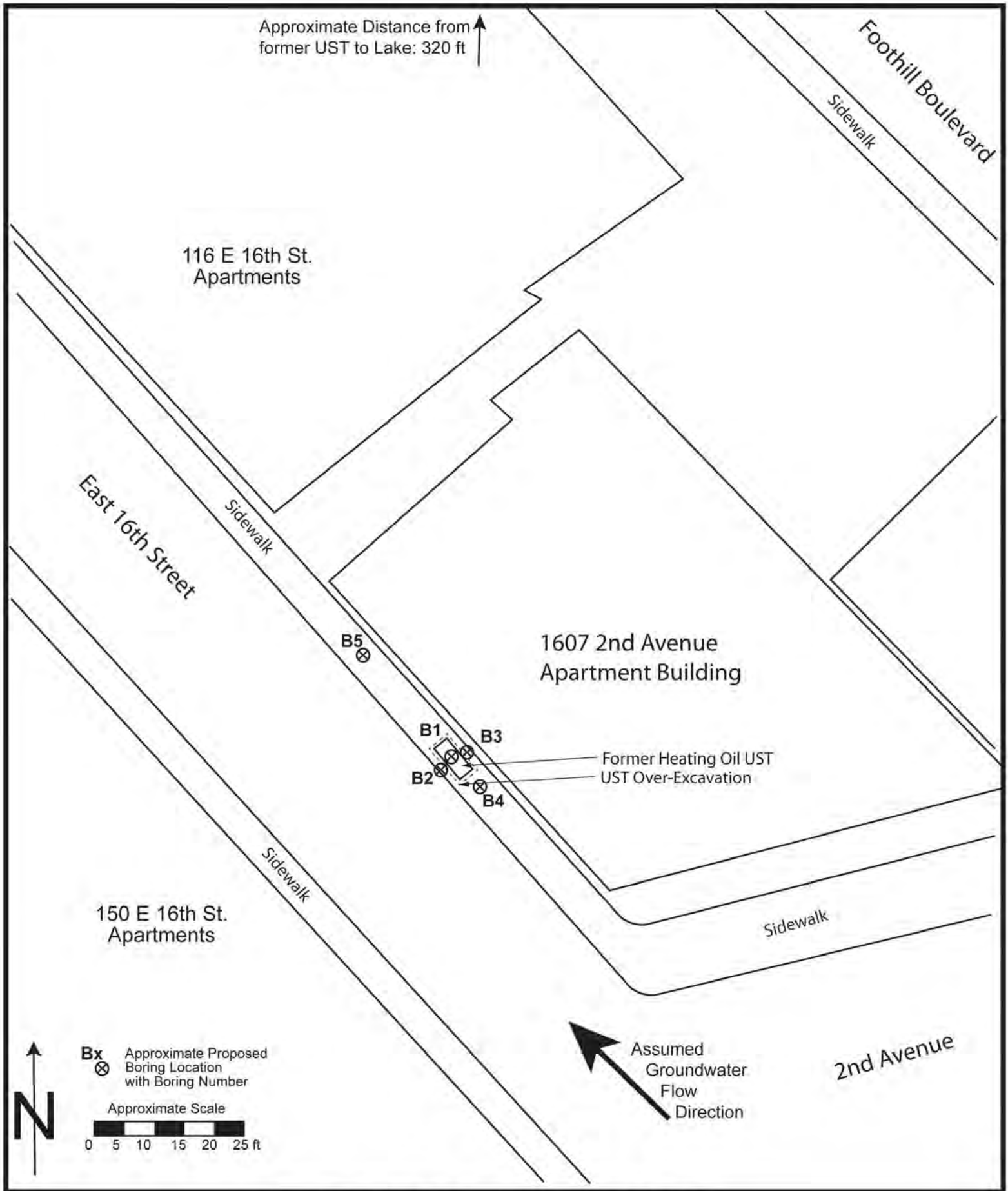
We look forward to working with you on this project.

Cordially,

SCHUTZE & ASSOCIATES, INC.

Jan H. Schutze, P.G., M.Sc.
President

Attachment: Figure 1 – Proposed Soil Boring Locations



PROPOSED BORING LOCATIONS
1607 2nd Avenue
Oakland, Alameda County, California

SCHUTZE & Associates, Inc.
Project No.: SCS539

Figure 1
August 2015