UNIVERSITY OF CALIFORNIA, BERKELEY

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

OFFICE OF ENVIRONMENT, HEALTH AND SAFETY
UNIVERSITY HALL, 3rd FLOOR

BERKELEY, CALIFORNIA 94720-1150

October 10, 2014

Lynn Nakashima
Berkeley Regional Office
700 Heinz Avenue, Suite 200C
Berkeley, California 94710
(510) 540-3839
Lynn.nakashi@dtsc.ca.gov

Subject: Building 280A and Building 450 Soil Sampling
University of California, Berkeley, Richmond Field Station, Richmond, California

Dear Ms. Nakashima:

UC Berkeley proposes to collect soil samples at two buildings at the Richmond Field Station site, in Richmond, California. The soil samples are being collected in response to information provided by Maggie Lazar, a UC research employee, regarding observations during construction activities at Buildings B280A and B450 in the mid-1990s. Ms. Lazar indicated that soil was excavated as a result of installing measurement sensors during controlled pavement studies. Shallow excavations up to 4 feet deep were dug at several locations inside Building 280A. Ms. Lazar indicated that a worker noted "dark and damp soil that smelled horrible and made his skin tingle and go numb." A second excavation location was also identified south of Building 450.

The purpose of collecting soil samples is to evaluate soil conditions which may have been encountered during the excavation activities. UC Berkeley and Tetra Tech conducted a site walk with Ms. Lazar on December 10, 2013 to discuss the history and identify specific areas to be sampled. We are proposing the sampling be conducted concurrent with the upcoming Field Sampling Plan IV soil sampling collection in the Coastal Terrace Prairie in order to use the same contractor completing hand-augering for the FSP samples.

This letter provides the rationale for the selected sampling locations and a summary of field sampling protocols. Figure 1 presents the proposed sampling locations.

Sample Locations

Three locations have been identified to collect samples. One location is within Building 280A, a second location is outside the northeast corner of Building 280A, and a third location is just south of Building 450. These locations were identified as the areas where an odor was observed during the past excavation activities. soil samples will be collected from depths of 0-1, 2-2.5, and 5-5.5 feet below ground surface (bgs).

Field Sampling Protocols

A hand auger will be used to collect the soil samples at the depth intervals identified previously. A photo ionization detector will be used to monitor VOC vapors during hand auger activities. A concrete cutter or other device will be used if necessary to access the subsurface soil. The hand auger will be decontaminated prior to collecting each soil sample. Soil will be collected from directly within the auger barrel using an Encore soil sampler for volatile organic compounds (VOC), and a disposal plastic scoop for pesticides, polychlorinated biphenyls (PCB), semivolatile organic compounds (SVOC), total extractable petroleum hydrocarbons (TPH-e), total purgeable petroleum hydrocarbons (TPH-p), and polycyclic aromatic hydrocarbons (PAH).

To collect the samples for VOCs and TPH-p, soil samples consisting of three Encore volumes will be collected from undisturbed soil within the depth interval of concern at each location. The Encore sampler will be pressed into the augered soil while the soil is still in the auger.

Soil for the pesticides, PCB, SVOC, TPH-e, and PAH samples will be collected using the following methods:

1. Soil will be placed in a steel bowl, and thoroughly mixed to homogenize the soil from the depth interval.

2. The soil from the bowl will be redistributed into a 1-inch thick uniform layer (approximately 16 by 24 inches) onto a plastic bag.

3. 30 subsamples of soil will be collected using a disposable spoon and placed into a pre-cleaned glass jar provided by the laboratory, and submitted to the analytical laboratory.

4. The steel bowl will be decontaminated between each sampling location using Alconox and de-ionized water.

A triplicate soil sample will be collected and analyzed for all analyses from one of the sample intervals to help evaluate soil heterogeneity and data confidence. The Encore samples and sample jars will be labeled, wrapped with protective bubble wrap material, placed into re-sealable plastic bags, and packed into an insulated cooler. These samples will be taken directly from the field to Curtis and Tompkins Laboratory in Berkeley, California.

Analyses Summary and Screening Criteria

Soil samples will be analyzed for VOCs, pesticides, PCB, SVOC, TPH, and PAH using the methods listed below.

- VOC analysis by EPA 8060
- Pesticide analysis by EPA 8081A
- PCB analysis by EPA 8082A
- SVOC analysis by EPA 8270
- TPH-e and TPH-p analysis by EPA 8015B
- PAH analysis by EPA 8270 SIM

Following the receipt of analytical results, sample results will be presented in a sampling letter report along with screening levels identified in the Final Site Characterization Report (Tetra Tech 2013).

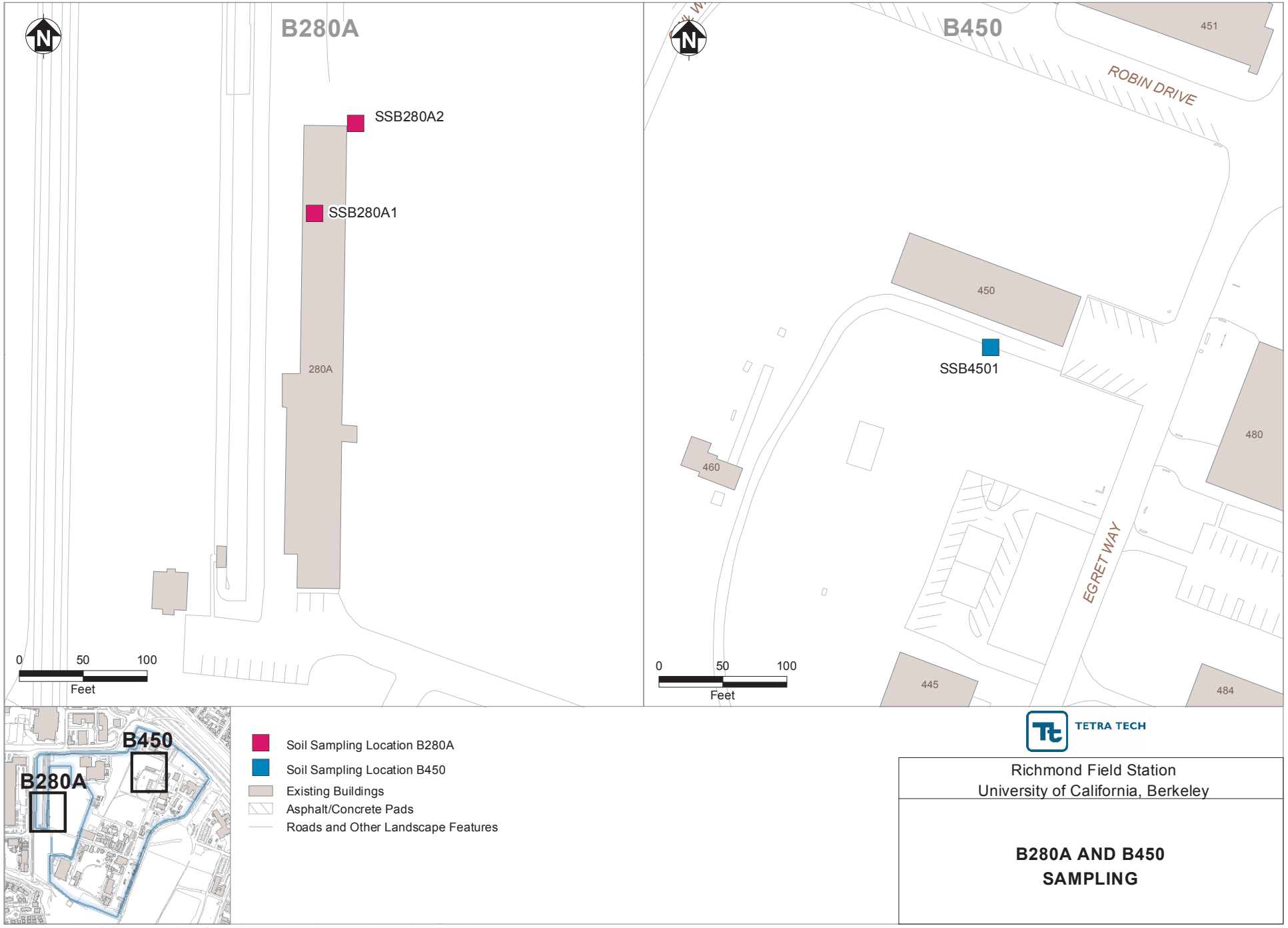
In addition, the California EPA benzo(a)pyrene potency equivalence factors (PEF) for SVOCs detected will be included. These factors come from the Office of Environmental Health Hazard Assessment's 'Air Toxics Hot Spots Program Risk Assessment Guidelines Part II: Technical Support Document for Describing Available Cancer Potency Factors' (2002). Benzo(a)pyrene is the primary representative for SVOCs. The PEFs are used to calculate the equivalent concentrations of the SVOCs with equivalency factors in terms of benzo(a)pyrene and the totals will be compared to the screening levels presented in the Final Site Characterization Report.

If you have any questions or comments regarding this submittal, please call me at (510) 642-4848.

Sincerely,

Greg Haet
EH&S Associate Director, Environmental Protection

Enclosure: B280A and B450 Sampling Figure



TETRA TECH

Richmond Field Station
University of California, Berkeley

B280A AND B450 SAMPLING

4/25/2014 V:\Misc_GIS\Richmond_Field_Station\Projects\Miscel\B280A_soil\B280A_B450 Sampling.mxd yashekia.evans