SMP FORM B: SAMPLING, DATA EVALUATION, SOIL MANAGEMENT ACTION

Project Name: NRLF Expansion Phase 4

Tracking Number: SMP PROJECT 20180702NRLFP4 Revision Number: NA

SMP Form B Initiation Date: 7/16/2018

EH&S Point of Contact: Alicia Bihler

If this form has not been approved or no activities have occurred for 1 year, the information contained herein must be reviewed and updated as necessary prior to work occurring in the project area.

1. Sampling Design (attach Sampling Strategy Memorandum)	
a. SMP Areas Affected	SMP Areas 16, 17, 24 *Consult SMP Figure 6*
b. Sampling Density and Planned Number of Sample Locations	Low (125 foot grid spacing), 3 sample locations *Consult SMP Figure 6*
c. Chemicals of Concern and Summary of Existing Data	As, Hg, Pb, PCBs, PAHs: no existing data is available *Consult SMP Tables 1 and 2, and the most current groundwater report Include data summary in sampling strategy memorandum*
d. Sampling Depths and Intervals	*Consult SMP Section 4.1*
e. Project is within area of GW above screening criteria	Yes ☐ No ☒ *Consult SMP Table 1* If Yes, consult RAW, notify DTSC
f. Sampling design meets all SMP prescriptive requirements	Yes ☒ No ☐ If No, DTSC concurrence received? Yes ☐ No ☐
2. Data Evaluation (Post-Sampling) (attach Data Summary Report)	
a. Sampling Design Implemented	Yes ☐ No ☐ If No, describe deviations:
b. Sample Results Meet Category I	Yes ☐ No ☐ *Consult SMP Table 3* If Yes, submit summary report with SMP Form B If sample results indicate unanticipated contamination or discovery, notify DTSC
c. Soil Exceeding Category I is Defined Vertically and Laterally	Yes ☐ No ☐ NA ☐ If No, consult sampling requirements or defer to excavation confirmation sampling
d. Soil Meets Category II Criteria	Yes ☐ No ☐ NA ☐ Soil proposed for on-site management requires plan Soil above Category II criteria requires excavation plan
3. Soil Management Action (attach On-Site Management or Soil Excavation Plan)	
a. On-Site Management Plan Meets SMP Requirements	Yes ☐ No ☐ *Consult SMP Section 4.3* If No, provide explanation or contact DTSC:
b. Excavation Plan Meets SMP Requirements	Yes ☐ No ☐ *Consult SMP Section 4.3* If No, provide explanation or contact DTSC:
4. SMP Form B Approval a. Greg Haet, Project Coordinator, EH&S	07/19/2018 (Signature, Date)
b. Scott Shackleton, Facilities Management, UCB, College of Engineering	07/18/18 Justin Cooke RFS Superintendent for Scott Shackleton (Signature, Date)
c. Professional Civil Engineer or Geologist	Jason Brodersen, PG 07/13/2018 (Name, Signature, Date, Stamp) REGISTERED GEOLOGIST JASON D. BRODERSEN No. 6262 STATE OF CALIFORNIA
5. References Used to Complete Form	*Include na ocuments*

TETRA TECH, INC.

July 19, 2018

Lynn Nakashima
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Berkeley, California 94710
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lnakashima@dtsc.ca.gov

Subject: **Northern Regional Library Facility (NRLF) Phase 4**
Soil Management Plan, Sampling Approach
Richmond Field Station, University of California, Berkeley

Dear Ms. Nakashima:

On behalf of the University of California (UC) Berkeley, Tetra Tech, Inc. proposes to collect soil samples at the Richmond Field Station associated with the construction of the NRLF Phase 4. The objective of the sampling effort is to characterize soil to be excavated and soil remaining in place under the foundation per the Soil Management Plan, Revision 1, dated April 12, 2017. The project footprint is approximately 27,000 square feet; the excavation depths range from 5 to 7 feet below ground surface. The volume of soil is greater than 10 cubic yards and therefore sampling is required according to the Soil Management Plan.

This letter provides the proposed sampling locations and a summary of field sampling protocols. The attached figure presents the project features and proposed sampling locations.

Sample Locations and Depths

The project is located within SMP Areas 16, 17, and 24, which are defined as low sampling density with arsenic, lead, mercury, polycyclic aromatic hydrocarbons (PAH), and polychlorinated biphenyls (PCB) as chemicals of concern. SMP areas, chemicals of concern, and sample frequency are presented in Section 4.1 and Table C-3 of the Soil Management Plan. Low sampling density areas dictate a minimum of one sample location per 15,625 square feet, mandating a minimum of two locations for this project. UC Berkeley proposes to collect samples from three locations within the excavation footprint; the three locations are presented on the figure following this letter.

Samples will be collected in 0.5-foot depth intervals every 2 feet starting at the surface and extending to a depth of 2.5 feet below the depth of planned soil disturbance. This will allow documentation of potential residual soil contamination beneath the excavation. Since the depth of the planned soil disturbance varies within the project area, the sampling design provides representative coverage for the variable depths as presented on Table 1 below.

Table 1. Sample Depths

Sample Location	Excavation Depth (feet bgs)	Sample Depths (feet bgs)
NRLF4-SB03	5	0-0.5, 2-2.5, 4-4.5, 6-6.5, 7-7.5
NRLF4-SB05	6	0-0.5, 2-2.5, 4-4.5, 6-6.5, 8-8.5
NRLF4-SB08	7	0-0.5, 2-2.5, 4-4.5, 6-6.5, 8-8.5, 9-9.5

The sample locations are not sequential as the locations are also shared with previously-numbered geotechnical boring locations which are not recommended for environmental analysis.

Field Sampling Protocols

All soil borings will be cleared by a utility surveyor prior to sampling. Soils from the top sample depth will be collected using a hand auger to help ensure sample mass recovery. Soils at depth will be collected through the advancement of push-technology drilling to the desired depth intervals. Sample cores will be retrieved within acetate liners in 4-foot sections. The sampling protocol will follow these steps:

1. The field sampler will identify the appropriate sample interval within the acetate liner.

2. The entire 6-inch sample core will be placed in a 32-ounce, wide-mouth sample jar.

3. Any sampling equipment used with either be disposable or decontaminated between samples using Alconox and de-ionized water.

4. Drilling equipment including auger bits and sleeves will be decontaminated between sample locations.

5. The sample jars will be labeled and packed into an insulated cooler. The sample will be transported under chain-of custody procedures directly to Enthalpy Laboratory in Berkeley, California.

6. Any soil or water investigation-derived waste will be containerized on site pending appropriate disposal or returned to the site pending analytical review. Soils and water can be returned to the site if analytical levels are below Category I criteria presented in the Soil Management Plan.

All sample collection protocols will be consistent with the Final Sampling and Analysis Plan included as Exhibit C2 to the Soil Management Plan. Any deviations from Exhibit C2 will be identified in the summary report.

Analyses Summary and Screening Criteria

Soil samples will be analyzed for arsenic, lead, mercury, PAH, and PCB using the methods listed below.

- Arsenic, lead, and mercury analysis by EPA 6020A/7471A
- PCB analysis by EPA 8082A
- PAH analysis by EPA 8270 SIM

The laboratory will be instructed to homogenize the soil mass provided before analyses.

Following the receipt of analytical results, sample results will be presented in a sampling letter report along with screening levels identified in the Soil Management Plan.

If you have any questions or comments regarding this submittal, please call me at (415) 497-9060.

Sincerely,

Jason Brodersen, PG
Program Manager

Enclosure: Figure

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REGATTA BOULEVARD

ROBIN DR

Phase 3

Phase 1

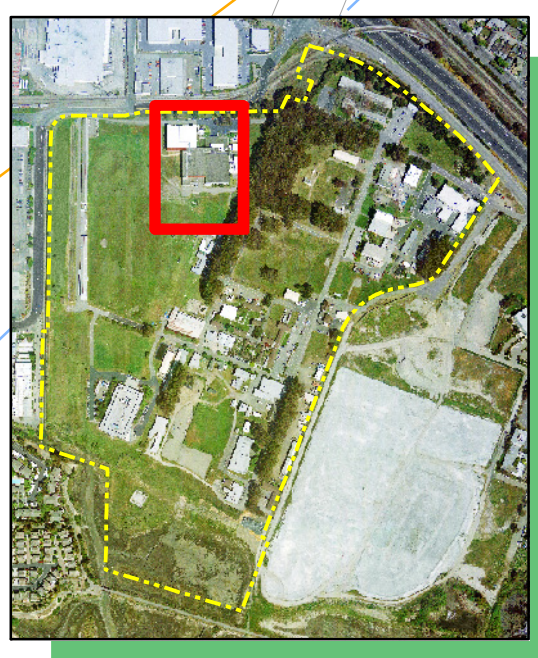
Phase 2

Phase 4

NRLF4-SB05

NRLF4-SB08

NRLF4-SB03



Proposed Soil Boring
Richmond Field Station Site Boundary
Existing RFS Sewer
Underground Culvert
Phase 4 Footprint
Underground Culvert, Abandoned (Grouted at Manholes)
Asphalt/Concrete Pads
Buildings

N

0 50 100

Feet

TETRA TECH

Richmond Field Station Site
University of California, Berkeley

NRLF Phase 4
Proposed Sampling Locations

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