DOCKETED	
Docket Number:	24-OPT-04
Project Title:	Potentia-Viridi Battery Energy Storage System
TN #:	261405
Document Title:	Dr Response 2 - Attachment 9, Soil Sampling and Analysis Plan
Description:	This document provides a soil sampling and analysis plan (SSAP) for the proposed Potentia-Viridi Battery Energy Storage System project.
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Submitter Role:	Applicant Consultant
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Attachment 9

Soil Sampling and Analysis Plan

TETRA TECH

Technical Memo

To:	Lauren McLeod and Kelene Strain, Capstone Infrastructure Corporation
From:	Mark Feldman, CHG CEG and Steven Grod, Tetra Tech, Inc.
Date:	October 21, 2024
Subject:	Soil Sampling and Analysis Plan, Potentia-Viridi Battery Energy Storage System, Alameda County, California
Project No.	117-372239-25001

1.0 INTRODUCTION AND BACKGROUND

The following technical memorandum provides a soil sampling and analysis plan (SSAP) for the proposed Potentia-Viridi Battery Energy Storage System project, located in Alameda County, California. This plan addresses data request DR HAZ-2 from the document, *"Determination of Incomplete Application and Request for Information for the Potentia-Viridi Battery Energy Storage System (Docket No. 24-OPT-04),"* dated September 6, 2024, prepared by the California Energy Commission (CEC).

In a Phase I Environmental Site Assessment (ESA) performed for the Site (Tetra Tech, 2024), historical agricultural use of the Subject Property from at least 1940 to 1958 was identified as a business environmental risk. The ESA went on to recommend that near-surface soils be sampled and analyzed for herbicide- and pesticide-related hazardous substances prior to being removed from the site for any purpose. This recommendation was carried forward to the permit application for the Potentia-Viridi facility as mitigation measure MM-HAZ-1, which included conducting the recommended soil testing after approval of the project and before the start of construction. Data requests DR HAZ-1 and DR HAZ-2 request that the proposed soil sampling be performed during CEC review of the application, to allow evaluation of impacts to construction workers and characterization of soils to be transported off-site.

This document provides the SSAP for the soil sampling requested by the CEC. The results of the sampling will be provided in a subsequent technical memorandum.

2.0 SAMPLING RATIONALE

The SSAP is summarized in Table 1. The SSAP consists of collecting four soil samples at the approximate locations shown in Figure 1, and analysis of those samples for organochlorine pesticides, chlorinated herbicides, and CAM-17 metals per the California Administrative Manual. The number and distribution of soil samples across the Subject Property is based on regulatory guidance developed by the California Department of Toxic Substances Control (DTSC) for sampling agricultural soils potentially impacted by pesticides and/or metals (DTSC, 2008). This guidance was intended for initial evaluation of agricultural properties being considered for new or expanded school sites, or for other projects where a change in land use could result in increased human exposure to agricultural soils.

The DTSC guidance distinguishes between irrigated agricultural land used as orchards or for cultivation of row, fiber, or food crops, and other types of agricultural properties, such as grazing land or pasture, dry-farmed land, and land where agricultural use ceased prior to 1950. More extensive sampling is recommended for irrigated properties where pesticides are more likely to have been used; and less (or no) sampling is recommended for non-irrigated properties and other properties where pesticides are unlikely to have been used. The Subject Property is likely to have been dry farmed: evidence for this assertion includes the topography of the Subject Property, which consists of rolling terrain unsuitable

for irrigation; and the absence of irrigation wells, which would presumably be required to supply water for irrigation. For properties where there is uncertainty regarding dry farming, the DTSC guidance recommends limited sampling at a rate of four discrete samples per site, with one sample collected in each quadrant of the site.

The DTSC guidance recommends limiting laboratory analyses to organochlorine pesticides and arsenic. For the purpose of this SSAP, the broader suite of compounds requested by the CEC (organochlorine pesticides, chlorinated herbicides, and CAM-17 metals) will be analyzed.

3.0 METHODOLOGY

The following subsections describe the methods that will be used to conduct the soil sampling program.

3.1 SAMPLE LOCATIONS

The soil sampling locations will be identified in the field using a geographic positioning system (GPS) application running on a smartphone. This method is typically accurate to within 15 to 20 feet of the sampling location, which is adequate for the purpose of this SSAP.

3.2 SAMPLE COLLECTION

The following procedures will be used to collect soil samples for laboratory analysis:

- Samples will be collected with a scoop, spoon, or trowel made from a material suitable for environmental sampling, such as stainless steel, plastic, or aluminum. Sampling tools with chrome plating or painted surfaces will be avoided as they may introduce contaminants into the samples.
- All sampling tools will be decontaminated prior to each use as described below in Section 3.4.
- Foreign material overlying the sampling location, such as rocks or vegetation, will be removed with the sampling tool prior to soil sample collection.
- The sampling tool will then be used to collect a soil sample to a depth of 6 inches below ground surface. Multiple scoops may be necessary to achieve the desired sampling depth or sample volume.
- The sampled soil will be placed directly into widemouth glass jars with Teflon-lined screw caps provided by the laboratory. The jars will be closed immediately after being filled with soil.
- Any soil which is not placed into the container shall be returned to hole made during sample collection.

3.3 SAMPLE HANDLING AND DOCUMENTATION

After each soil sample has been collected, the sample containers will be labeled with the following information:

- Company name
- Project identifier (project name or project number)
- Sample ID
- Sampler's initials
- Date and time of sample collection

After labeling, the sample containers shall be placed in reclosable plastic ziplock-type bags and stored in a cooler on ice pending shipment to the laboratory.

Sampling activities will be documented in a field logbook or on preprinted field forms. At a minimum, documentation will include notes providing a chronologic description of the field activities, and a chain-of-custody form, which documents sample custody from the time of sample collection through delivery to the laboratory.

3.4 EQUIPMENT DECONTAMINATION

Equipment used for soil sampling shall be decontaminated prior to each use by scrubbing with a laboratory-grade detergent solution, followed by rinses with potable water and distilled water, and air drying.

3.5 SAMPLE SHIPMENT

Coolers used for sample shipment shall be prepared as follows:

- Check that samples are sealed in ziplock-type bags and placed upright in cooler, and that ice is placed in plastic bags.
- Add additional packing material, such as bubble wrap, around the samples to prevent container breakage during shipping.
- Pack additional ice in plastic bags between and above the samples.
- Place the signed chain-of-custody form in a ziplock-type bag and tape to the inside of cooler lid.
- Close cooler lid and secure with packing tape.
- Tape shipping documents to top of cooler.

3.6 LABORATORY ANALYSES

The soil samples will be analyzed using the following methods:

- Organochlorine pesticides using EPA Method 8081A
- Chlorinated herbicides using EPA Method 8151A
- CAM-17 metals using EPA Method 6020/7471A

All analyses will be performed by a California State Water Resources Control Board-certified laboratory.

4.0 DATA EVALUATION AND REPORTING

Data evaluation will consist of comparing the analytical results with human health-based screening levels for commercial/industrial workers. The screening levels that will be used for this purpose include DTSC Human Health Risk Assessment Note 3 soil screening levels (DTSC-SLs) for commercial/industrial workers (DTSC, 2022), or USEPA Regional Screening Levels for soil (RSLs) for commercial/industrial workers (EPA, 2024). Where available, the DTSC-SLs will be used for screening purposes; RSLs will be used only for compounds which do not have a DTSC-SL.

The results of the investigation will be provided in a technical memorandum to include the following:

- Narrative describing the field investigation.

- Conclusions regarding the potential presence of agriculture-related chemicals in soil.
- Recommendations for further work, if warranted.
- Tables summarizing the laboratory analytical results.
- A figure showing the sampling locations.
- Attachments, including a copy of this SAP and the laboratory report.

5.0 REFERENCES

CEC, 2024. *Determination of Incomplete Application and Request for Information for the Potentia-Viridi Battery Energy Storage System (Docket No. 24-OPT-04)*. September 6.

DTSC, 2008. *Interim Guidance for Sampling Agricultural Properties (Third Revision)*. August 7.

DTSC, 2022. *Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC-SLs)*. May.

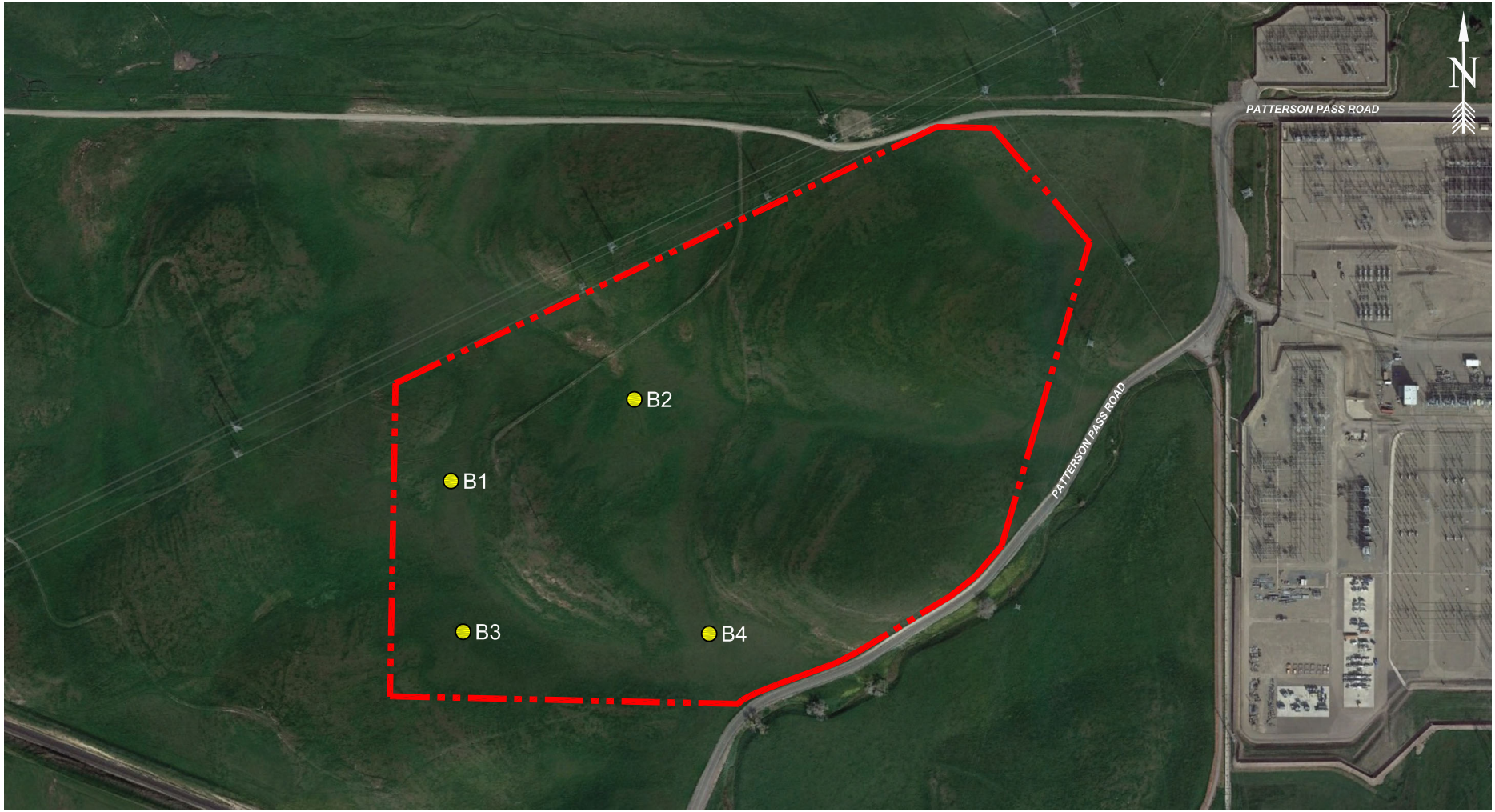
EPA, 2024. *Regional Screening Levels (RSLs) – Generic Tables*. https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. May.

Tetra Tech, 2024. *Phase I Environmental Site Assessment, Undeveloped Land, 17257 Patterson Pass Road – Part of APN 99B-7890-002-04, Alameda County, California 95377*. August 7.

ATTACHMENTS

Figure 1 – Proposed Sampling Locations

Table 1 – Soil Sampling and Analysis Plan



LEGEND

SUBJECT PROPERTY BOUNDARY

B1 PROPOSED SAMPLING LOCATION AND DESIGNATION

0 500 1,000

SCALE (FEET)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. BASE MAP AND SUBJECT PROPERTY BOUNDARIES DERIVED FROM AMERICAN LAND TITLE ASSOCIATION / NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS (ALTA / NSPS) LAND TITLE SURVEY BY TETRA TECH (2023).
3. PROPOSED SAMPLING LOCATIONS MAY BE MOVED AT THE TIME OF INVESTIGATION BASED ON FIELD CONDITIONS.

UNDEVELOPED LAND
17257 PATTERSON PASS ROAD
PART OF APN 99B-7890-002-04
ALAMEDA COUNTY, CALIFORNIA 95377

TETRA TECH

OCTOBER 21 2024

TETRA TECH PROJECT NO. 117-372239-25001

PROPOSED SAMPLING LOCATIONS

FIGURE 1

Table 1: Soil Sampling and Analysis Plan

Location ID	Sample ID	Latitude	Longitude	Depth Interval (feet bgs)	Organochlorine Pesticides (EPA Method 8081A)	Chlorinated Herbicides (EPA Method 8151A)	CAM-17 Metals (EPA Method 6020/7471A)	Rationale
B1	B1-0.5	37.711638°	-121.576726°	0.0-0.5	✓	✓	✓	NW quadrant of area of concern
B2	B2-0.5	37.712286°	-121.574683°	0.0-0.5	✓	✓	✓	NE quadrant of area of concern
B3	B3-0.5	37.710263°	-121.576456°	0.0-0.5	✓	✓	✓	SW quadrant of area of concern
B4	B4-0.5	37.710264°	-121.573703°	0.0-0.5	✓	✓	✓	SE quadrant of area of concern

bgs: below ground surface
Latitude and longitude are in decimal degrees