

WORKPLAN
for
Equipment Removal and Cleanup
of
Pacific Gas and Electric Company
Substation "E"

Piedmont, CA

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SAC 6691A

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1.0 INTRODUCTION

This workplan was prepared for Pacific Gas and Electric Company to support the planned equipment removal from the inactive Piedmont Substation "E," located at 408 Linda Avenue in Piedmont, California. Distribution substation equipment is being removed to prepare it for sale, and it is anticipated that a new owner will eventually redevelop the property.

This plan presents the overall approach to environmental closure of the facility in accordance with applicable regulations. Included is the approach and procedures for cleaning up hazardous materials in the building and soil that were identified during previous testing at the property, as described in a report by Pacific Gas and Electric Company Technical and Engineering Services Department (TES 2000). The hazardous materials identified previously at the property are listed below.

- Oil residues on surfaces and equipment inside the building. Some of these areas contain polychlorinated biphenyls (PCBs) at trace levels, most below the federal cleanup criterion.
- Battery corrosion stains in a small area inside the building.
- Lead paint in surface soil outside the substation.
- Non-friable asbestos-containing materials will be encountered during the equipment removal.

It is anticipated that a variety of waste materials will require management during the planned equipment removal of the Piedmont Substation "E." This workplan presents guidelines for the cleaning and removal of electrical equipment, cleaning of residual PCBs, removal of asbestos containing materials, removal of chipping and peeling lead based paints and removal of lead contaminated soil.

1.1 Site Description And Background

Piedmont Substation "E" is located at 408 Linda Avenue in Piedmont, California. The substation contains a two-story building that formerly housed the electrical equipment. Some of the former substation equipment has been removed, and the remaining de-energized equipment is inside the building. The property is located in a residential neighborhood and is partially surrounded by fencing.

The Piedmont Substation "E" was originally built in 1926 to supply direct current power to the trolley line in the city of Piedmont. The substation was also used to convert 12kV to 4kV electric power which served residents and businesses in Piedmont and Oakland between 1926 and 1991. It is not uncommon for substation facilities of this vintage to have some used equipment containing PCB insulating oil, lead-based paint or asbestos.

1.2 Previous Work

Between October 1999 and March 2000, Pacific Gas and Electric Company's Technical and Ecological Services (TES) performed testing at Piedmont Substation "E." The purpose of the investigation was to determine whether hazardous materials associate with the past utility operations at the property are present in the building and surrounding soil. Results of the 10/99-3/00 sampling were presented in a report entitled Site Investigation at PG&E's Piedmont Substation "E." which will be referred to in this document as "TES 2000." The TES 2000 report confirmed the presence of asbestos, lead based paint and PCBs above levels that Pacific Gas and Electric Company would allow to remain when closing the facility.

2.0 PROJECT SUMMARY

Pacific Gas and Electric Company contractors will remove the equipment and cleanup Piedmont Substation "E." The objective of the cleanup is to leave a vacant property that is ready to be redeveloped by a new owner. Materials integral to the building that may contain asbestos and lead will not be removed. These may include flooring, paint and other construction materials.

The work presented in this document will be conducted in two stages as outlined below:

2.1 *Equipment Removal and Cleanup of Building Interior*

This stage of the project involves cleanup and removal of equipment and residual materials from the building. This stage also includes testing and cleaning the motor room sump area.

2.2 *Soil Cleanup*

Soil surrounding the building that contains lead concentrations above the residential soil cleanup criteria of 255 milligrams per kilogram (mg/kg) will be removed. Confirmation testing will be conducted for seventeen metals, including lead, designated by the State of California in Title 22 as hazardous. The purpose of testing for other metals is profiling the soil for off-site disposal.¹

3.0 CLEANUP AND SAMPLING PLAN

3.1 *Equipment Removal and Cleanup of Building Interior*

3.1.1 **Cleanup Objectives**

- The goal is to clean the building to below regulatory threshold levels for known chemicals.

3.1.2 **Pre-Removal Cleanup and Sampling**

- PCB wipe sampling will be conducted inside the building to confirm the TES 2000 report. Cleaning of machinery will be based on the sample results as follows:
 - The machinery and surfaces that test for PCBs at greater than $10\mu\text{g}/100\text{cm}^2$ will be cleaned by the double wash/rinse method described in 40 CFR 761.360. Once the machinery has been cleaned according to the prescribed method, it will be managed in accordance with the regulations.
 - PCB cleanup levels for high contact solid surfaces and low contact indoor surfaces will be $10\mu\text{g}/\text{cm}^2$ as indicated in 40 CFR 761.125.

¹ These metals are usually referred to as "CAM 17," after the California Assessment Manual that preceded Title 22.

- Sampling in the motor room sump will be conducted by drilling a soil boring at the proposed location shown in Figure 2. Drilling will continue to ten feet or refusal, whichever occurs first. Two samples will be taken, one at 5 feet and one at 10 feet or refusal. The samples will be analyzed for PCBs (EPA Method 6080/608), "CAM 17 Metals" (EPA Method 6010), and Total Extractable Petroleum Hydrocarbons (TEPH, EPA Method 8015 modified for kerosene, diesel and motor oil).
- Drilling, collection of samples and sealing of the borehole will be supervised by a California registered geologist, who will log the boring using the Unified Soil Classification System. Immediately following sampling, the borehole will be sealed to the ground surface using slurry of cement and bentonite. Further action will depend on sample results.

3.1.3 Hazardous Materials Management during Equipment Removal

Asbestos and lead paint cleanup will be accomplished by a contractor and workers trained and licensed to perform the work. Air monitoring will be performed to establish that airborne levels of asbestos and lead during cleanup are below the OSHA action levels. Additional monitoring will be performed as needed. Depending on air monitoring results, cleanup of asbestos and lead cleanup may be conducted within containment with negative pressure.

- Chipping and peeling paint will be removed from equipment, collected with HEPA filtered vacuum cleaners and managed as hazardous waste.
- Asbestos materials that are part of the equipment being removed will be managed in accordance with applicable requirements. Materials used in the cleanup process will be collected and managed in accordance with applicable requirements.
- The battery room floor will be washed with an alkali solution.

3.1.4 Post Removal Cleanup and Sampling

- Confirmatory lead wipe samples on the floor in the battery acid area will be taken after the area is clean.
- Asbestos air samples will be taken after the machinery has been removed. The clearance criteria is .01 fibers/cc (10 times below the OSHA action level) with analysis by Phase Contrast Microscopy (PCM, EPA Method 7400).
- The number and locations of confirmation samples will be taken in accordance with EPA guidelines. ?

3.2 Soil Remediation

3.2.1 Cleanup Objectives

The soil cleanup level is 255 ppm lead. This cleanup goal is recommended by Department of Toxic Substances Control (DTSC), for lead in residential soil. ?

3.2.2 Pre-Cleanup Sampling

Soil sampling was conducted by Pacific Gas and Electric Company in an extensive study (TES 2000). The lead results for soil are shown in Figure 1. Five (5) additional Title 22 ("CAM 17") metals samples will be taken for soil profiling prior to excavation and disposal

3.2.3 Cleanup Activities

The Contractor will remove six inches of topsoil from the grounds around the building exterior, as indicated in Figure 2. Additional soil samples may be taken as necessary to verify excavation limits, and analyzed for lead using EPA method 6010. The excavation activities will be monitored visually for dust, and water will be applied to the soil for dust control as needed. Excavation will not extend past the PG&E property. ?

3.2.4 Verification Sampling and Excavation Closure

Following removal the soil will be tested using five composite samples of 10 sub-samples each. Each sample will represent a subarea of the property surrounding the building, so that all excavated areas are ? ?

sampled. If a subarea sample exceeds the cleanup goal of 255 mg/kg, then six more inches of soil will be excavated from that subarea and it will be resampled using the method described above. Once the entire property is confirmed to meet the cleanup goal, the excavations will be backfilled to grade with clean imported fill. ✓

3.3 Notifications

| WHO | WHAT | WHEN |
|---|--|--|
| Department Toxic Substances Control (DTSC) ✓ | Hazardous waste generator number for the site ✓ | Prior to removal of any hazardous materials from the site ✓ |
| Bay Area Air Quality Management District (BAAQMD) ✓ | NESHAP notification for asbestos related work ✓ | Ten (10) days prior to the start of work ✓ |
| Cal-OSHA ✓ | Notification of intention for asbestos related work ✓ | 24 hours prior to the start of abatement ✓ |
| Underground Services Alert (USA) | Notification prior to boring Notification prior to excavation | 2-3 days prior to boring 2-3 days prior to excavation |

- As the project develops, other agencies may be notified as appropriate.

4.0 HEALTH AND SAFETY

4.1 Contractor Personnel

- All site personnel training will be consistent with applicable Federal, State and local regulations as a minimum. All personnel involved in

site activities shall have certificates or written assurances of competency, qualifications or training as required by law. All training records must be available for inspection.

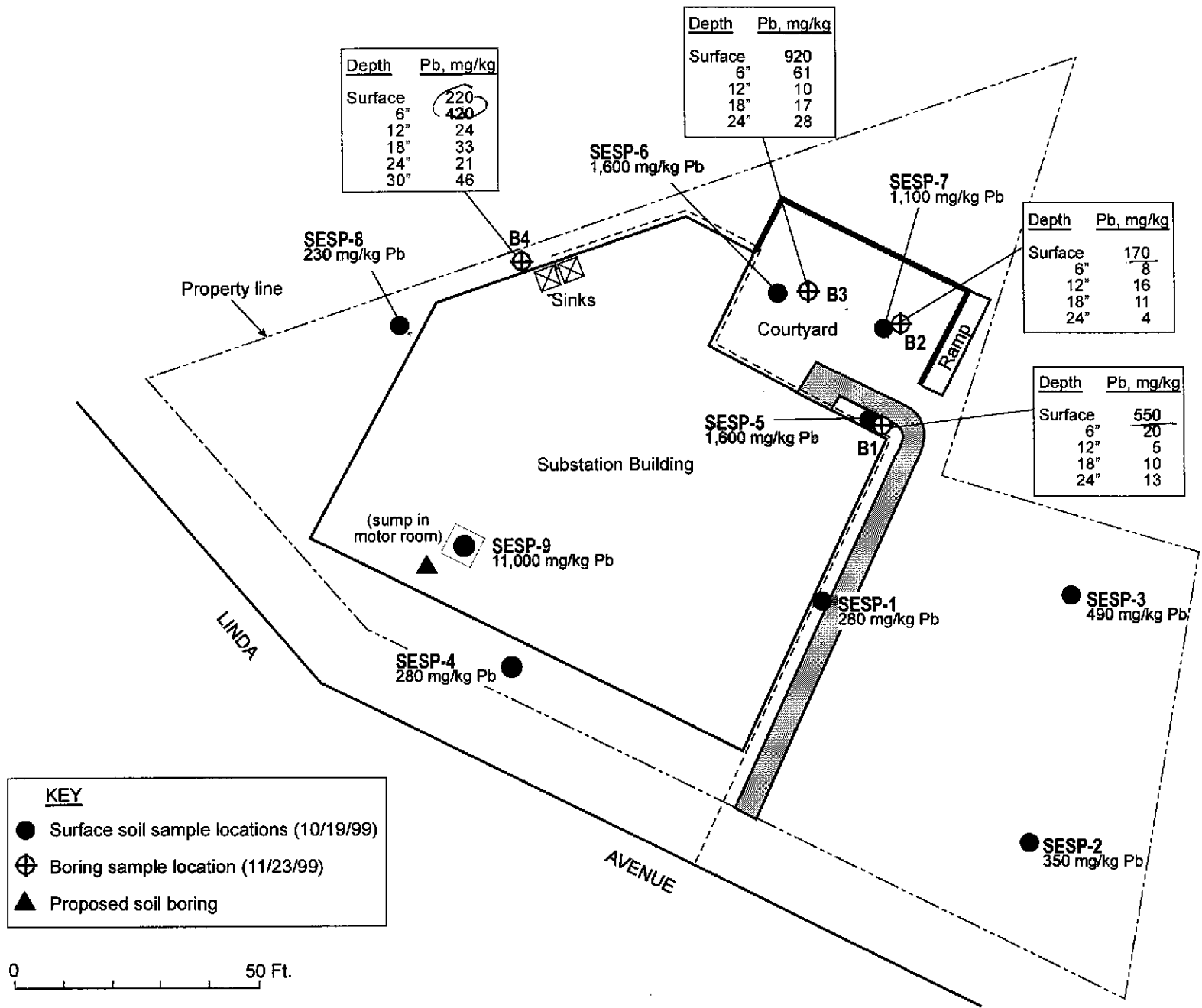
- All contractors performing abatement for this project will submit to Pacific Gas and Electric Company a Health and Safety Plan.

4.2 *Public Health and Safety*

Equipment removal and cleanup of the materials at the Piedmont Substation "E" will proceed in a manner to prevent any health threat or nuisance to the public beyond that of a normal construction project. Additional precautions that Pacific Gas and Electric Company are taking for this project include:

- Pacific Gas and Electric Company has retained KELLCO Services, Inc., a third party environmental consultant, to provide independent environmental and health and safety oversight during the project.
- A temporary fence will be installed around the site perimeter to discourage trespassers. This fence will temporarily close the pathway that crosses the property between Linda Avenue and Oakland Avenue.
- A traffic plan will be prepared with a transport plan for the large equipment required for this project. The traffic plan may have some of the following elements: temporary closure of Linda Avenue while removing heavy equipment from the building, sidewalk closure directly in front of Piedmont Substation "E". A safety/traffic monitor (flagman) will be available as needed to facilitate vehicle and pedestrian traffic.
- Work hours will comply with City of Piedmont requirements that are intended to minimize disturbance of adjacent residence.
- Water will be used during soil excavation to ensure that soil excavation does not create dust.

- During soil excavation, KELLCO will provide perimeter air monitoring to verify that airborne levels of lead are well below regulatory limits. Dust control measures are expected to suppress airborne lead. However, if the perimeter monitoring shows the airborne lead above $15\mu\text{g}/\text{m}^3$, which is half the OSHA action level, work will be suspended until more aggressive dust control measures can be employed.



Source: TES, 2000

Figure 1: Lead test results in soil, Piedmont Substation "E"

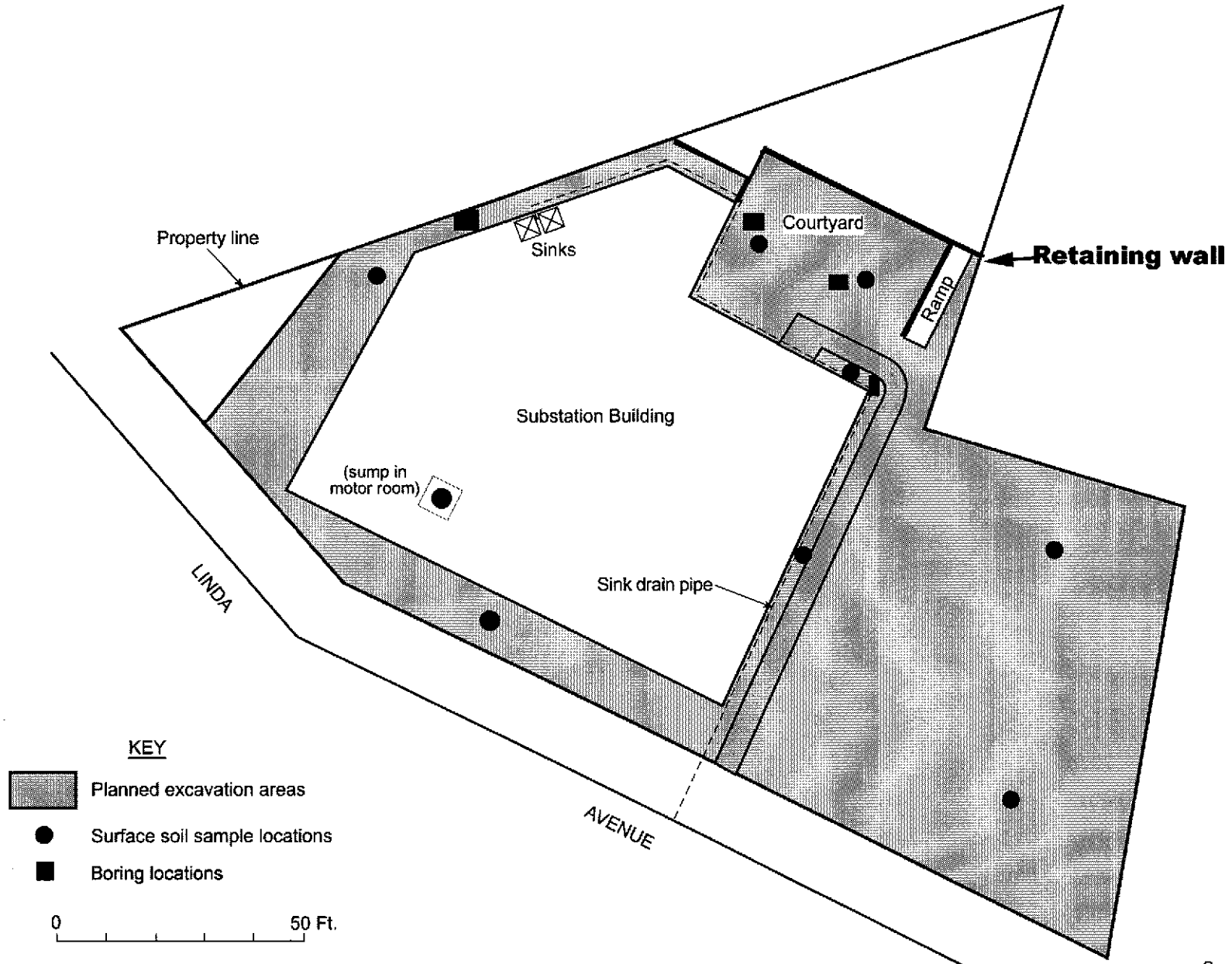


Figure 2: Planned excavation, Piedmont Substation "E"