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## San Francisco Bay Regional Water Quality Control Board

March 25, 2025

GeoTracker: [L10009838494](https://www.waterboards.ca.gov/geotracker/L10009838494)

City of Albany  
Department of Public Works  
Attn: David Lam  
1000 San Pablo Avenue  
Albany, CA 94706  
Sent via email only: [DLam@albanyca.org](mailto:DLam@albanyca.org)

**Subject: Concurrence with Soil Sampling and Analysis Plan, Albany Landfill, Albany, Alameda County**

Dear Mr. Lam:

Regional Water Board staff has reviewed and hereby concurs with the City of Albany's March 3, 2025, *Soil Sampling and Analysis Plan* (SAP), which was prepared by GSI Environmental (GSI). The SAP was submitted as a follow-up to the City of Albany's gamma walkover survey (GWS), which was completed in October 2024 by Cabrera Services, Inc. (Cabrera). The GWS identified 10 locations with surface gamma count rate measurements that were statistically higher than the remainder of the site but were still generally consistent with what might be expected at a landfill that contains soils and construction debris from various sources. Of these ten locations identified in the GWS, only three locations were considered potentially consistent with the disposal of alum mud, based on inferences about size, depth, and location within former disposal cells.

GSI prepared this SAP in conjunction with Cabrera to describe the field and analytical methodologies for the proposed additional investigation, which will include:

- Collecting surface radiological measurements at the ten locations identified with statistically elevated gamma count rates to evaluate radiological conditions near the ground surface within these areas and estimate potential exposure to radioactivity by members of the public utilizing the site for recreational purposes; and
- Collection of additional surface radiological measurements and trenching shallow pits to allow subsurface observation and collection of soil samples at the three locations that were considered potentially consistent with the disposal of alum mud to further assess the potential presence of alum mud and to estimate potential exposure to radioactivity by members of the public.

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ALEXIS STRAUSS HACKER, CHAIR | EILEEN M. WHITE, EXECUTIVE OFFICER

The City of Albany submitted an initial version of this SAP on December 30, 2024. Based on discussion with Regional Water Board staff and additional information provided by the California Department of Toxic Substances Control (DTSC), the revised (March 3, 2025) SAP also includes:

- Collecting surface radiological measurements at an eleventh location that is located within the boundaries of Cell 4 of the former landfill. Although no statistically elevated gamma counts were recorded anywhere over the former Cell 4 area, this location was selected based on a historical (1974) aerial photograph showing piles of whitish material visually similar to alum mud, and whitish material recorded in the boring log from a 1988 test pit in the Cell 4 area.
- Advancing a soil boring to a planned depth of 20 feet at this eleventh location to observe whether waste characteristics are consistent with alum mud, and to collect subsurface radiological measurements.

The surface radiological measurements to be collected at all eleven locations will consist of dose/exposure rate field measurements, which will be performed using a SPIR-Ace radioisotope identification device (or equivalent instrument) with a lanthanum bromide (LaBr3) detector, which has a higher resolution than the sodium iodide (NaI) detectors previously used for the GWS, improving identification of individual energy peaks in the gamma ray spectrum and improving the confidence in the identification of specific radioisotopes.

Composite soil samples collected for radioisotope analysis will be analyzed for the following radioisotopes:

- Thorium-232 (and decay products radium-228, actinium-228, lead-212, bismuth-212, and thallium-208);
- Uranium-238 (and decay products thorium-234, radium-226, lead-214, bismuth-214, and lead-210);
- Uranium-235;
- Potassium-40;
- Cesium-137;
- Cobalt-60; and
- Europium-152, 154, and 155.

Laboratory soil sample results for radionuclides will be compared with expected concentrations and relative ratios of radionuclides associated with alum mud to determine if its presence is likely or unlikely. Historical soil sample radiological results for alum mud collected from the Former Southern Pacific Blair Landfill (Terraphase, 2024) will be used to define the radionuclides of concern and radiological characteristics of alum mud for comparison with laboratory soil sample results.

We approve of this proposed scope of work. If you have any questions, please contact Fangli Yin of my staff at (510) 622-2406 or [fangli.yin@waterboards.ca.gov](mailto:fangli.yin@waterboards.ca.gov).

Sincerely,

A handwritten signature in cursive script that reads "Eileen M. White".

Eileen M. White, P.E.  
Executive Officer