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Director and State Public Health Officer

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February 25, 2025
Lisa B. Hernandez, MD, MPH | Health Officer
Santa Cruz County, Health Services Agency (HSA)

RE: CDPH assessment of Santa Cruz County agricultural soil sampling in response to the Moss Landing battery fire

Dear Dr. Hernandez,

The Environmental Health Investigations Branch (EHIB) of the California Department of Public Health is responding to a request for technical assistance in evaluating soil sampling data collected from agricultural fields in the southern portion of Santa Cruz County on January 30, 2025. The soil samples were collected in response to concerns of deposition of metals onto agricultural fields from the Vistra Moss Landing Energy Battery Storage Facility fire that broke out on January 16, 2025.

EHIB reviewed the analytical results for these samples. Metal concentrations detected were compared to background concentrations representative of the Watsonville vicinity and to state and federal screening levels designed to protect the most sensitive subpopulations, including children, from health risks. The range of metal concentrations found, background levels¹, and applicable health-based screening levels are presented in the Table 1 below.

Based on the soil data provided, CDPH concludes the following:

- With the exception of the maximum concentration of cobalt and manganese, the metal concentrations found are consistent with background levels.
- None of the metal concentrations found exceed health-based soil screening values, which are protective for sensitive populations.
- Exposure to the metal concentrations found in the agricultural soil samples do not pose a health risk to the public.

¹ Background levels acquired from: 1) Bradford, G.R., et al (1996). Background concentrations of trace and major elements in California soils. Kearney Foundation of Soil Science, University of California. <https://ucanr.edu/sites/poultry/files/297094.pdf>; 2) Smith D.B et al. (2013). Geochemical and mineralogical data for soils of the conterminous United States. US Geological Survey. <https://pubs.usgs.gov/ds/801/>



Table 1: Screening-level evaluation of Soil Metal Concentrations from Santa Cruz County

| Metals Reported | Amount of Metal in Santa Cruz County Agricultural Commissioner Soil Samples (mg/kg or ppm) | Background Levels in Soil Samples – Watsonville, CA | | ATSDR Comparison Values - Soil | | | | | DTSC Screening Levels - Soil |
|-----------------|--|---|---|---|--------------------------------------|----------------------------|---|---|--|
| | | Kearney (1996): Watsonville, CA (mg/kg or ppm) | USGS (2013): Watsonville, CA (mg/kg or ppm) | ATSDR EMEGs – chronic exposure | ATSDR EMEGs- intermediate exposure | ATSDR EMEGs - acute values | ATSDR Pica Values for Children – intermediate values | ATSDR Pica Values for Children – acute values | |
| Boron | 6 – 19 ppm | 9 – 15 ppm | n/a | 11,000 ppm – child 160,000 ppm – adult (same values for acute, intermediate, chronic comparison values) | | | 1,100 ppm (same values for acute and intermediate comparison values) | | n/a |
| Cobalt | 7.4 – 32 ppm | 2.7 – 9.2 ppm | 7 – 27 ppm | n/a | 570 ppm – child 8,000 ppm - adult | n/a | 53 ppm | n/a | n/a |
| Manganese | 250 – 990 ppm | 268 – 593 ppm | 200 – 900 ppm | 2,900 ppm -child 40,000 ppm - adult | n/a | n/a | n/a | n/a | n/a |
| Nickel | 56 – 120 ppm | 9 - 27 ppm | 23- 160 ppm | 1,100 ppm – child 16,000 ppm – adult | n/a | n/a | n/a | n/a | 820 ppm – residential, noncancer 11,000 ppm – commercial / industrial noncancer |

ppm: parts per million or milligrams per kilogram (mg/kg)

ATSDR: Agency for Toxic Substances and Disease Registry

ATSDR EMEGs: Environmental media evaluation guides are ATSDR comparison values that represent estimated contaminant concentrations below which humans exposed during a specific timeframe (acute, intermediate, or chronic) are not expected to experience noncarcinogenic health effects.

DTSC: Department of Toxics Substance Control

If you have any questions, please contact Russell Bartlett at (510) 620-3608.



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