

SUBJECT: Widespread Thallium Exceedances in Palisades and Eaton Fire Areas

TO: Dr. Barbara Ferrer, PhD, MPH, MEd  
Director, Los Angeles County Department of Public Health

Dr. Muntu Davis, MD, MPH  
Los Angeles County Health Officer

Debra Lee  
Chief, Division of Occupational Safety & Health, California Department of Industrial Relations

Katherine Butler, MPH  
Director, California Department of Toxic Substances Controls

Zoe Heller  
Director, CalRecycle

Mike Martucci  
Acting Regional Administrator, Region 9, U.S. Environmental Protection Agency

CC: Assemblymember Jacqui Irwin  
District 42, California State Assembly

Assemblymember John Harabedian  
District 41, California State Assembly

Senator Ben Allen  
District 24, California State Senate

Senator Sasha Renée Pérez  
District 25, California State Senate

Councilmember Traci Park  
11th District, Los Angeles City Council

County Supervisor Lindsey Horvath  
3rd District, Los Angeles County Board of Supervisors

County Supervisor Kathryn Barger  
5th District, Los Angeles County Board of Supervisors

Senator Adam Schiff  
U.S. Senator, State of California

Alejandro Padilla  
U.S. Senator, State of California

Representative Brad Sherman  
32nd District, U.S. House of Representatives

Representative Judy Chu  
28th Congressional District, U.S. House of Representatives

SUBJECT: Widespread Thallium Exceedances in Palisades and Eaton Fire Areas

February 1, 2026

Dear Colleagues,

We write to formally notify the Los Angeles County Department of Public Health (DPH), the California Department of Toxic Substances Control (DTSC), CalRecycle, the California Department of Industrial Relations Division of Occupational Safety and Health (DOSH), and the U.S. Environmental Protection Agency (USEPA) of findings from the Community Action Project LA (CAP.LA) residential soil testing effort led by the University of California Los Angeles in collaboration with Loyola Marymount University and Purdue University.

The recent data as shared publicly by the research team indicates widespread thallium exceedances across areas impacted by the 2025 Palisades and Eaton Fires. We respectfully request coordinated agency engagement to investigate the underlying cause(s) of these exceedances and to provide clear, rapid, and authoritative guidance to residents and workers regarding appropriate next steps.

### **1. Regulatory and public-health context**

Thallium is a regulated metal under California hazardous waste and occupational safety regulations,<sup>1</sup> and it is one of the CAM-17 metals historically evaluated in post-wildfire residential soil investigations in California.<sup>2</sup> USEPA has established a health-based residential soil screening level (RSL) of 0.78 mg/kg for thallium.<sup>3</sup> In August of 2025, the DTSC also recommended this level for post-fire impacted soil screening.<sup>4</sup> Thallium has been screened for in prior California wildfire recoveries to identify properties requiring further evaluation, selective remediation, and confirmatory resampling.<sup>5</sup>

Thallium is also a recognized human health hazard. It has documented neurological, gastrointestinal, cardiovascular, and dermatologic effects associated with exposure.<sup>6</sup> Exposure pathways of concern in post-

---

<sup>1</sup> *Cal. Code of Regs.* Title 22 § 66261.24 and *Cal. Code of Regs.* Title 8 § 5155

<sup>2</sup> Whelton, A.J. & Mohanty, S. 2025. Post-wildfire residential soil sampling practices already exist in California. <https://engineering.purdue.edu/PlumbingSafety/resources/Soil-Sampling-From-Past-Fires-05102025.pdf>

<sup>3</sup> U.S. Environmental Protection Agency, 2024. Regional Screening Levels (RSLs) for Resident Soil. <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>

<sup>4</sup> California Department of Toxic Substances Control. *Residential Soil Evaluation*. August 2025. Sacramento, California. <https://dtsc.ca.gov/wp-content/uploads/sites/31/2025/05/DTSC-Residential-Soil-Evaluation-Guidance-and-Cover-Letter-August-2025.pdf>

<sup>5</sup> Whelton, A.J. et al. 2025. Urgent Community Concern Over Parcel Soil Testing After Wildfire. <https://engineering.purdue.edu/PlumbingSafety/opinions/Opinion-Soil-Testing-Post-Fire-2025-05-14.pdf>

<sup>6</sup> U.S. Agency for Toxic Substances and Disease Registry (ATSDR). 2024. Toxicological Profile for Thallium. <https://www.cdc.gov/tsp/ToxProfiles/ToxProfiles.aspx?id=309&tid=49>

fire residential environments include incidental soil ingestion, inhalation of contaminated dust, dermal contact, potential uptake into home-grown produce, as well as occupational exposure during debris handling, soil disturbance, and reconstruction activities.

## **2. Why thallium warrants heightened concern in post-fire environments**

While multiple metals may be present in post-fire soils, thallium warrants particular consideration for several reasons relevant to public-health protection and worker safety:

- **High toxicity at low concentrations.** Thallium is among the more toxic metals encountered in residential soils, reflected in its relatively low health-based screening level compared to many other metals. As a result, exceedances indicate narrow margins between background concentrations and levels of potential concern.
- **Systemic toxicity and non-specific early symptoms.** Thallium toxicity can present with non-specific symptoms (e.g., gastrointestinal distress, fatigue, neuropathy), which may delay recognition of exposure and complicate attribution in community and occupational settings following disasters.
- **Mobility and bioavailability.** Compared to some other metals commonly evaluated after fires, thallium can be relatively mobile in soils and more readily taken up by plants under certain conditions, raising concerns for both direct contact exposure and indirect exposure pathways.
- **Limited public and occupational familiarity.** Unlike lead or arsenic, thallium is less familiar to residents, contractors, and even some practitioners, increasing the likelihood of misinterpretation of results or inconsistent exposure-control practices in the absence of clear agency guidance.

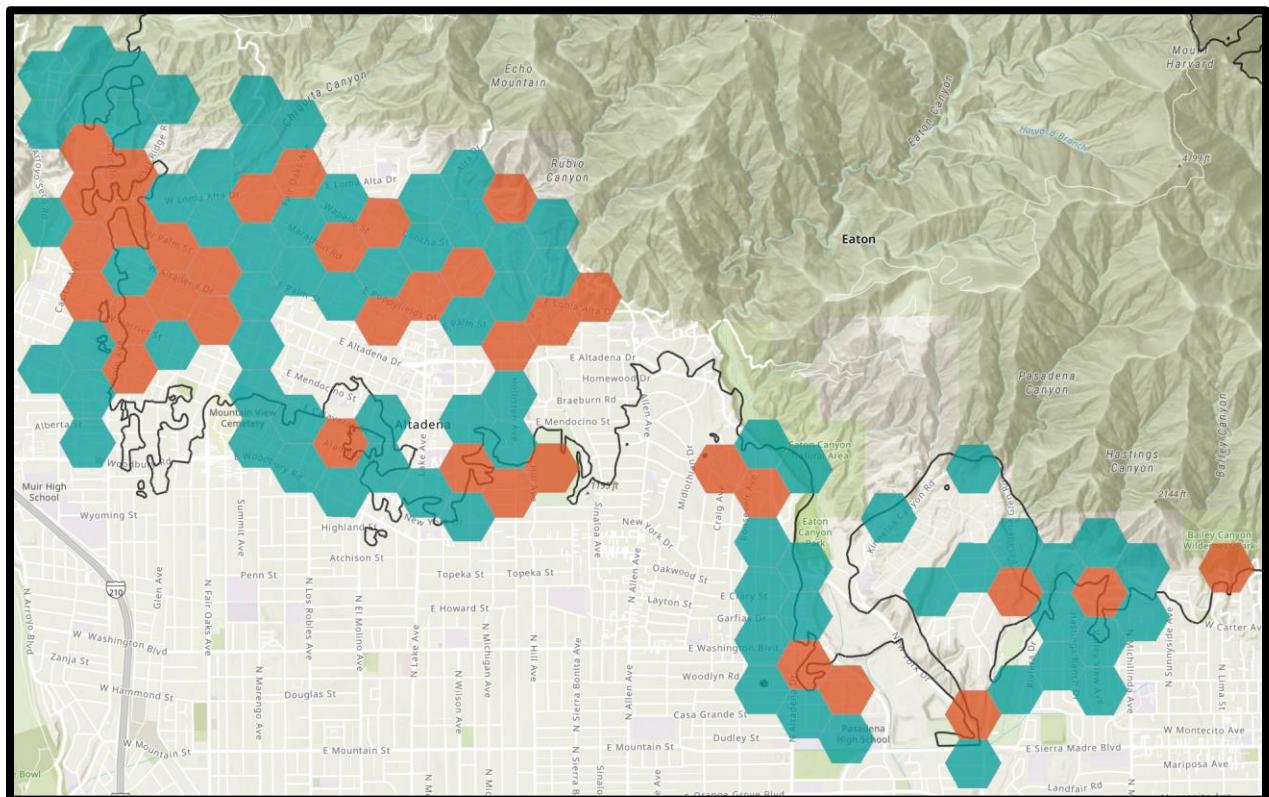
For these reasons, identification of thallium exceedances, particularly when observed across multiple, spatially distributed areas, has historically warranted further investigation and coordinated agency response, rather than reliance on ad hoc, resident- or contractor-driven action.

## **3. Summary of CAP.LA findings (Palisades and Eaton Fire areas)**

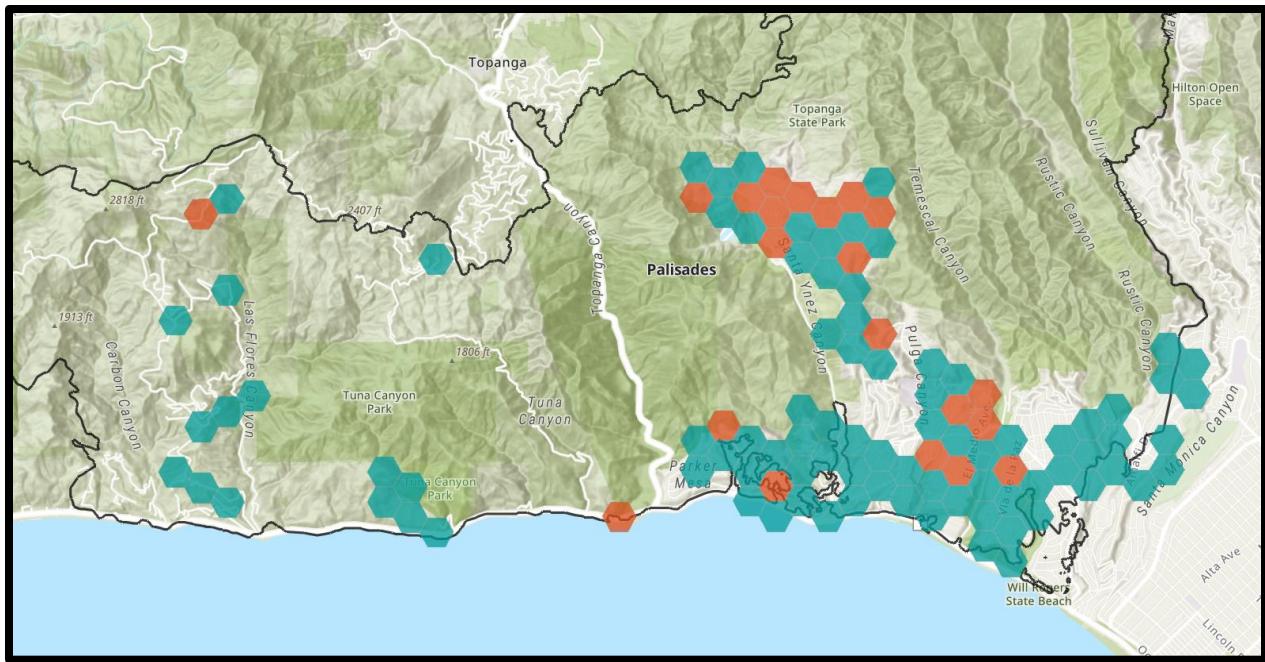
The CAP.LA effort, which currently includes composite soil samples analyzed under USEPA Method 6020B for over 1,400 individual properties across the Palisades and Eaton Fire areas, aggregated soil results into approximately 375-meter hexagonal decision units to protect participant anonymity. Some soil samples represent scraped properties, while others represent standing homes. Summary statistics for hexagons are reported to describe sample results, and within that framework:

- Across the two 2025 Los Angeles fire footprints, **56 hexagonal areas exhibit mean thallium concentrations exceeding the established residential soil screening level**, meaning the exceedance persists even when results are averaged across all samples within each hexagon.
- Some exceedances are substantial. For example, **one hexagonal area in the Palisades Highlands (n=25 samples) has a mean thallium concentration of 11.83 mg/kg** and **one hexagonal area in the Altadena Lincoln Avenue area (n=20 samples) has a mean thallium concentration of 13.05 mg/kg**, each an order-of-magnitude exceedance of the residential soil screening level.
- Property-level reports reviewed by the authors from within the CAP.LA dataset include **multiple individual soil samples with thallium concentrations exceeding 90 mg/kg**, representing greater than 115x exceedance of the residential soil screening level and, in some cases, may approach or exceed thresholds relevant to hazardous waste considerations under Cal. Code Regs., Title 22.
- Across the entire study area, CAP.LA reports a **mean thallium concentration of approximately 2.6 mg/kg**, more than three times the residential soil screening level of 0.78 mg/kg.

Figures 1 and 2 illustrate area-level mean exceedances (orange) and non-exceedances (blue) across both fire areas. Where neither blue nor orange hexagons are shown, no soil data was made available.



**Figure 1.** Zoomed in area-level mean exceedances (orange) in Eaton Fire area from CAP.LA study.



**Figure 2.** Zoomed in area-level mean exceedances (orange) in Palisades Fire area from CAP.LA study.

Taken together, 56 hexagonal units at an approximately 375-meter scale correspond to many square kilometers of the Palisades and Eaton Fire footprints. At this extent, the findings suggest a potentially systemic condition affecting multiple neighborhoods, which historically has triggered coordinated agency investigation and guidance rather than reliance on parcel-by-parcel, resident-initiated responses.

#### **4. Why agency engagement is necessary**

Although many residents are pursuing soil testing independently, several factors make coordinated agency leadership essential:

- 1. Technical interpretation and consistency.** Accurate interpretation of metals data depends on sampling depth, compositing strategy, analytical methods, detection limits, and quality assurance. Health-based screening levels are intended to inform risk-management decisions, not to serve as standalone pass/fail thresholds. Historically, cleanup goals served as pass/fail thresholds for soil restoration with consideration for both health-based screening levels and hazardous waste considerations pertaining to the economic value of property;<sup>7</sup> however, in August 2025, DTSC issued guidance with consideration only of health-based criteria for property owners.<sup>8</sup> Without

<sup>7</sup> Whelton, A.J. Problems and Solutions to the DTSC Post-Fire Soil Testing Guidance Document. August 2025. <https://engineering.purdue.edu/PlumbingSafety/opinions/Opinion-Soil-Guidance-Post-Fire-2025-08-25.pdf>

<sup>8</sup> California Department of Toxic Substances Control. *Residential Soil Evaluation*. August 2025. Sacramento, California. <https://dtsc.ca.gov/wp-content/uploads/sites/31/2025/05/DTSC-Residential-Soil-Evaluation-Guidance-and-Cover-Letter-August-2025.pdf>

comprehensive, standardized protocols and agency oversight, residents and contractors may receive inconsistent or incomplete guidance.

2. **Established California practice.** For more than a decade, California wildfire recoveries have relied on a consistent framework: site investigation, confirmatory residential soil sampling for CAM-17 metals (including thallium), comparison to screening criteria, selective soil excavation/remediation where exceedances are identified, and confirmatory resampling. These efforts were overseen by county and state agencies and paired sampling with remediation, rather than shifting responsibility entirely to individual property owners or workers.
3. **Economic, rebuilding, and equity considerations.** Absent clear agency direction, residents may face uneven financial burdens, uncertainty with lenders and insurers, and delays in rebuilding. Having spoken with many property owners who have these exceedances, financial constraints and stress are evident. Historically, agency-overseen soil assessment programs provided a defensible basis for recovery decisions and reduced disparities in outcomes.
4. **Worker safety and occupational exposure implications.** Elevated thallium levels raise worker safety considerations during soil disturbance, debris handling, and reconstruction activities. Determining when hazard assessments, specialized personnel, exposure controls, personal protective equipment, or regulated-waste handling requirements apply is not something residents or contractors can reasonably do on their own.<sup>9</sup>

In addition, some agency and research groups may be inadvertently encouraging members of the public to encounter chemical exposures while self-collecting contaminated soils for lead analysis.<sup>10,11</sup> The new data indicates that even when soil sample lead concentrations do not exceed the 80 mg/kg California screening level, thallium and other metals, such as arsenic, may be present at concentrations that exceed hazardous waste thresholds,<sup>12</sup> and where encouraging such activities may present a risk to human health.

---

<sup>9</sup> Whelton A.J. 2025. Worker Safety at Properties with Elevated Thallium or Beryllium in Soil or at Buildings. <https://engineering.purdue.edu/PlumbingSafety/opinions/Opinion-Thallium-and-Beryllium-Worker-Safety-Recommendations-2026-01-29.pdf>

<sup>10</sup> Los Angeles County. 2016. Eaton and Palisades Fires Soil Testing Program. Los Angeles, California. <http://publichealth.lacounty.gov/media/wildfire-soil-testing/>

<sup>11</sup> University of Southern California. 2026. Public Exchange: Testing soil safety after L.A. wildfires. Los Angeles, California. <https://public-exchange.org/usc/project/soil-testing/>

<sup>12</sup> Cal. Code of Regs. Title 22

## **5. Need to determine underlying cause(s)**

At present, the source(s) of elevated thallium remain uncertain. Potential contributors include fire-related deposition, redistribution of pre-existing contamination, local geology, or other mechanisms. Determining whether exceedances are fire-related or attributable to other causes is essential to selecting appropriate public-health, environmental, and occupational safety responses and is squarely within the expertise and authority of your agencies.

## **6. Requested agency actions**

In light of the above, we respectfully request DPH, DTSC, CalRecycle, DOSH and USEPA engage to:<sup>13</sup>

1. Initiate a formal agency-led rapid investigation into the prevalence and distribution of elevated thallium in soils across the Palisades and Eaton Fire areas, informed by the findings and supplemented, as appropriate, by agency-directed sampling, data review and analysis to evaluate spatial patterns, magnitude of exceedances, and potential sources.
2. Determine whether exceedances are attributable to fire impacts or other causes, and communicate those findings rapidly and transparently to affected communities and workers.
3. Issue clear guidance for residents, contractors, and workers describing:
  - a. how thallium soil results should be interpreted;
  - b. what type(s) of professional evaluation are appropriate (e.g., licensed environmental engineers, or other qualified environmental professionals);
  - c. the recommended scope of such evaluations (e.g., exposure assessment, additional sampling design, remediation planning); and
  - d. how residents can identify qualified, appropriately credentialed consultants with relevant post-fire and metals experience, rather than relying on general or unrelated environmental services.
4. Evaluate whether established California post-fire soil assessment and remediation frameworks should be applied to impacted areas, rather than relying on uncoordinated, resident- or contractor-driven responses.
5. Provide direction on worker safety, occupational exposure, and regulated-waste considerations for properties with elevated thallium levels, including when Cal/OSHA consultation or hazard assessments may be warranted.

---

<sup>13</sup> Agencies may have the authority to support these communities under various codes and regulations, including, but may not be limited to, Cal. Health & Safety Code §§ 101040, 101085, 25300–2539, Cal. Public Resources Code §§ 40000 et seq., Cal. Labor Code §§ 6300–6719, and 40 CFR Part 307.

6. Discourage the self-collection of soil from fire impacted properties until proper site safety and risk assessments are conducted by qualified professionals (i.e., licensed professional engineers).
7. Recommend that soil safety and health risk assessments be based on, at a minimum, CAM-17 soils analysis as conducted following California fires over the past 10 years. Consider adding lithium to the soils analysis based on the large number of vehicles and other consumer products damaged by the fire.<sup>14</sup>

We appreciate your consideration of this notification and would welcome the opportunity to provide additional technical detail or participate in a briefing at your request.

## **7. Statement of independence**

Authors Eric Bollens and Tracy Quinn are not affiliated with the CAP.LA soil study. Their role was limited to the review of publicly-presented findings and laboratory reports shared by affected property owners, and to notifying appropriate agencies of observed patterns that may warrant investigation.

Author Andrew Whelton helped create the CAP.LA effort, as well as design the soil study, but has not been involved in the review of the daily soil testing data, nor presented summaries to organizations or the public. He has reviewed some CAP.LA reports received by the study participants and has recommended follow-up actions to property owners. Whelton is also leading a study reviewing environmental testing reports for the Palisades and Eaton Fire areas which, in some cases, indicate thallium detections on standing home indoor surfaces.<sup>15</sup>

---

<sup>14</sup> Bendix, A. Douglas, D. 2025. In cleanup from California fires, lithium-ion batteries are a dangerous challenge. *NBC News, Inc.* <https://www.nbcnews.com/science/science-news/california-fire-cleanup-lithium-ion-batteries-dangerous-challenge-rcna188945>

<sup>15</sup> Whelton, A. 2025 Los Angeles Fires Public Health Response. West Lafayette, Indiana: Purdue University. <https://engineering.purdue.edu/PlumbingSafety/project/LA-fires>

Signatories are listed in their individual capacities and not on behalf of their respective institutions.

Respectfully submitted,

Andrew J. Whelton, Ph.D.

*Professor, Purdue University*

*<awhelton@purdue.edu>*

Eric R. Bollens

*Fire-impacted Community Member*

*Chief Technology Officer, LightBox*

*<ebollens@lightboxre.com>*

Tracy Quinn, P.E.

*Fire-impacted Community Member*

*Chief Executive Officer, Heal the Bay*

*<tquinn@healthebay.org>*

*(Signing in a personal capacity; affiliation listed for identification purposes only)*