



September 2, 2020

Sent Via US Mail and Email

Robert M. Pesapane
Director
Recovery Division
Federal Emergency Management Agency Region IX
1111 Broadway, Suite 1200
Oakland, California 94607-4052

Subject: Proposed Removal of Soils and Abatement of Threats, Camp Fire Debris
Removal

Dear Mr. Pesapane:

Department of Resources Recycling and Recovery (CalRecycle) staff have reviewed the response to you from the United States Environmental Protection Agency Region IX (USEPAR9) dated May 8, 2018, regarding the Federal Emergency Management Agency's (FEMA) inquiry about whether the removal of three to six inches of soil beneath the debris from residential structures destroyed by wildfire is an operationally feasible approach to conservatively ensure abatement of any immediate threat to the public. In that correspondence USEPAR9 indicated that it believes that the removal of three to six inches of soil underlying the debris should be sufficient to abate the immediate threats.

CalRecycle represents that the removal of an additional three to six inches of material underlying the debris will not conclusively abate all immediate threats from the debris for the following reasons:

1. The impacts presented by structural ash and debris resulting from wildfires are well documented in assessments of resulting ash and debris by the Department of Toxic Substances Control (DTSC) in 2007 in San Bernardino County and San Diego County and again in 2015 in Lake County and Calaveras County. The ash and debris are known to contain concentrated amounts of lead, arsenic, and other metals that can present both immediate and long-term threats to public health and safety and/or the environment.
2. Sampling results and visual observations from the 11 major fires over the past four years do not support that removal of the top three to six inches of material alone addresses all debris or ash embedded within the remaining soil. The table below for the Camp Fire summarizes the numbers of lots that were initially clean after the

removal of three to six inches of soil and the number of lots requiring additional material removal by re-scrapes after failing to achieve specified cleanup goals.

| Removal Level | Total Lots | Percentage (%) |
|------------------|------------|----------------|
| Initially Clean | 8,192 | 66% |
| One Re-Scrape | 3,496 | 28% |
| Two Re-Scrapes | 655 | 5% |
| Three Re-Scrapes | 131 | 1% |
| Four Re-Scrapes | 12 | 0.10% |
| Five Re-Scrapes | 1 | 0.01% |
| Total | 12,487 | 100% |

If no sampling, evaluation, and additional material removal had been conducted, 4,295 residential properties (i.e., 34 percent of all the enrolled properties) would have hazardous levels of metals in place above residential use standards without further regulatory oversight. Similarly, 26 percent of the properties for the Carr Fire in Shasta County and 19 percent of the properties for the Thomas Fire in Ventura County failed to achieve the cleanup goals after the initial removal of three to six inches of material.

3. The premise of FEMA's inquiry and USEPAR9's response is that the top three to six inches removed is primarily soil (i.e., native material), and that one would not expect soil to be impacted below native material. The initial removal of material may or may not actually capture native soil. The process of removing debris from large structures and the limitations of the equipment and personnel often result in contaminants imbedded in the soil below the footprint of the debris field at depths greater than six inches. Given the known impacts to the first soil horizon, only confirmation sampling can ensure that native soil is remaining and all of the ash and debris have been removed, as it has been demonstrated that visual clearance is not sufficient.
4. While removing the top three to six inches of truly native material may address immediate threat, without confirmation sampling there is no opportunity for additional evaluation or subsequent removal. Under a scenario without confirmation sampling, properties containing potentially hazardous material (1) are cleared for redevelopment without limitations and are immediately released to the local government and owner or (2) are released with redevelopment limitations for the owner and local government to resolve at a future date. Furthermore, any redevelopment limitations after the initial cleanup will have to be resolved knowing that likely very little or none of any insurance policy settlement will remain for additional sampling, analyses, and debris removal by the owner. For many USEPAR9 and DTSC remediation programs, depth horizons alone cannot confirm removal of hazardous constituents and soil sampling is required to clear a property of both immediate and long-term threats. The two outcomes described above do not adequately remediate the sites and may hinder the long-term recovery of the area.

5. With respect to contamination occurring from other sources and/or activities, CalRecycle's protocol is designed to determine if elevated concentrations are attributed to contamination independent of the fire through review of background levels, site-specific borings, visual observations, and owner interviews. When those factors support contamination independent of the fire, the local government and owner are alerted and no further material is removed.
6. Leaving residential lots with hazardous materials potentially remaining is inconsistent with FEMA's guidance regarding temporary housing. The FEMA Fact Sheet for Temporary Housing Units specifically states, "Sites with unmitigated/unremediated hazardous materials/wastes issues must not be selected." CalRecycle interprets this FEMA guidance to mean that sites previously known to contain hazardous materials present an unacceptable risk that requires remediation documentation prior to being considered for temporary housing. As mentioned in Section 2 above, there is a high probability that sites with only three to six inches of material removed and no confirmation sampling remain contaminated with hazardous substances and are an unacceptable risk for both the temporary and permanent housing of disaster survivors.

The Camp Fire debris removal operation is the most recent and well-documented example of private property debris removal in California to date. The *Camp Fire Summary Report* dated July 24, 2020, (Report) summarizes all activities associated with the removal of hazardous materials, including CalRecycle's confirmation sampling methodology (including the use of XRF screening), cleanup goals, the review process, and cleanup summaries based on property type. Based on the contents of the Report and for the reasons mentioned above, CalRecycle believes that all cleanups must be to specified levels and confirmation sampling must be required to abate threats, immediate or otherwise, associated with the ash and debris. CalRecycle can provide an electronic copy of the Report for review if you feel that the information contained therein will aid in resolving this issue.

Thank you for your consideration in this matter. Please contact me at (916) 341-6320 or at wes.mindermann@calrecycle.ca.gov if you have questions.

Sincerely,



Wes Mindermann, PE
Supervising Engineer
Engineering Support Branch

cc. Ryan Buras, California Governor's Office of Emergency Services