

Parents Against SSFL

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COMMENTS ON THE SSFL BOEING AREA 1 BURN PIT REMOVAL ACTION WORK PLAN (RAW)

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Background

Parents Against Santa Susana Field Lab (Parents) is a grassroots group of parents, residents, and cleanup activists living near the Santa Susana Field Lab (SSFL). Parents formed when members learned that our children were being diagnosed with cancer at rates above the national average. By advocating for the complete remediation of the SSFL, Parents aims to protect nearby communities from exposure to the site's toxic and carcinogenic contamination in order to reduce, to the greatest extent possible, the number of local families who have to hear the words, "your child has cancer."

The SSFL is located in the hills between Simi Valley and Los Angeles. Over 700,000 people live within 10 miles of the site. The contamination at SSFL migrates offsite in the natural occurrences of wind, fire and rain.^{1,2} The site has the potential to discharge approximately 187,000,000 gallons per day of stormwater runoff³ that may contain pollutants such as radionuclides, persistent toxic chemicals, federally banned pesticides, and heavy metals from decades of nuclear experiments and rocket engine tests.⁴ The contamination onsite isn't confined to barrels or buried in vaults; rather it's loose in the soil and groundwater from numerous leaks, spills, fires, explosions, and illegal waste disposal practices, much of which took place at the Area 1 Burn Pit (A1BP). This makes the contamination mobile and especially dangerous to residents living nearby. The movement of toxins from the site significantly impacts

¹ [Fairwinds Energy Education: Radioactive microparticles related to the Woolsey Fire in Simi Valley, CA](#)

² [Cohen, et al.: The Potential for Offsite Exposures Associated with Santa Susana Field Laboratory, Ventura County, California](#)

³ [Boeing's 2022 Proposed NPDES permit, PDF page 97; Discharge Points and Receiving Waters](#)

⁴ See attached, *List of Chemicals Historically Detected at the SSFL*

the surrounding communities; there's a 60% higher cancer incidence rate amongst people living within two miles of the site compared with those living further away.⁵

The SSFL A1BP is one of the most extensively contaminated areas of the site. The burn pit was used from 1958 - 1971 to burn⁶:

- 450,000 gallons of fuels
- 6,924 igniters
- 21,300 gallons of process chemicals
- 13,810 pounds of reactive metals
- 31,717 gallons of organic solvents
- 5,121 pounds of explosives
- 32,932 cubic feet of toxic gasses
- 191 gallons of heavy metal toxins

Summary of Major Concerns in RAW

This Remedial Action Workplan (RAW) fails in a multitude of ways, including:

- The remediation goals set in the RAW are not protective of public health despite the risk to communities living below the SSFL.
- The RAW does not encompass all contaminants of concern found at the Area I Burn Pit and fails to give an adequate explanation as to why.
- The RAW fails to establish how Boeing or DTSC will protect groundwater or adequately prevent migration of disturbed contaminated soils through thorough cleanup strategies and effective BMPs.
- The RAW fails to adequately protect wildlife by using inadequate standards based on representative species that do not sufficiently represent the wildlife habits at SSFL.
- The use of an ISE Order and resulting CEQA exemption prevent the opportunity for legitimate public input and critical environmental review to influence the cleanup plans of one of the most contaminated areas of SSFL.
- The RAW fails to clarify if future cleanup actions will fully remediate the areas insufficiently remediated by this RAW.

A. The remediation goals set in the RAW are not protective of public health despite the risk to communities living below the SSFL.

According to Table 3 of the RAW, chemicals at the Area I Burn Pit will only be remediated in hotspot areas where concentrations of the twelve selected chemicals of

⁵ [Morgenstern: Cancer Incidence in the Community Surrounding the Rocketdyne Facility in Southern California](#)

⁶ [DTSC Appendix D Area 1 Burn Pit RFI Report](#)

ecological concern exceed either their high EcoRBSL values or 10 times the high EcoRBSL.⁷ At those concentrations, the chemicals that remain onsite will exceed human health based standards as established in the 2014 SRAM by a range from 6 to nearly **8,000 times** the concentration that would be protective for humans.

The ISE states that, “The draft RAW will be prepared in accordance with Health and Safety Code sections 25323.1 and 25356.1”⁸ Health and Safety Code 25323.1 states; “Removal action work plan” means a work plan prepared or approved by the department or a California regional water quality control board that is developed to carry out a removal action, in an effective manner, that is protective of the public health and safety and the environment.”⁹ Note that the Health and Safety code states “ public health **and** safety of the environment,” not a choice between the two; that delineation is interpreted and included erroneously by DTSC. Citing the many lines of evidence we have of offsite migration of contaminants^{10,11,12} and increasing risk of mobilization due to climate change and soil disturbance, we argue the most protective Human Health RBSLs in the 2014 SRAM should be used.¹³

B. The RAW does not encompass all contaminants of concern found at the Area I Burn Pit and fails to give an adequate explanation as to why.

The ISE action plans mandate the remediation of only 20 contaminants of concern.¹⁴ Over 55 contaminants of concern at the A1BP are documented in the RAW as posing a health risk to workers.¹⁵ An October 2020 Groundwater RFI study identified 158 COCs that may also be present in the soil.¹⁶ If only 20 COCs are addressed in this cleanup, contamination remaining onsite in the A1BP will continue to cause harm to local residents through off-site migration.

The ISE, upon which the RAW relies to establish its remedial action objectives, cited the March 2021 RCRA Facility Investigation Data Summary and Findings Report for the Area I Burn Pit (RFI) in order to single out the 12 chemicals of ecological concern addressed in the RAW. However, Table 4-1 of the RFI listed 77 chemicals that were detected above screening levels at the Area I Burn Pit site.¹⁷ Of these 77, all of which exceeded the human health based screening level, 35 exceeded the high EcoRBSL screening level.

⁷ The chosen EcoRBSLs were established in the 2022 Settlement agreement, Attachment 4, exhibit 5. The RAW erroneously cited Attachment 3.

⁸ [ISE Consent Order](#), pdf pg. 8

⁹ CA Health & Safety Code § 25323.1 (2022)

¹⁰ [Fairwinds Energy Education:Radioactive microparticles related to the Woolsey Fire in Simi Valley, CA](#)

¹¹ [Cohen, et al.: The Potential for Offsite Exposures Associated with Santa Susana Field Laboratory, Ventura County, California](#)

¹² [Louisiana State University, 2014; Potential for Offsite Exposure Presentation](#)

¹³ [2023 Boeing NPDES](#), pdf pg. 22

¹⁴ [DTSC RAW](#), pdf pg. 50

¹⁵ [DTSC RAW](#), pdf pg. 157

¹⁶ [Addendum To Appendix C: Potential Transport Of Contaminants In Vadose Zone To Groundwater Area I Burn Pit Rfi Site](#)

¹⁷ [RCRA RFI AIBP March 2021](#)

There is no justification to leave any COCs in place when they pose a risk to human health, wildlife, water and the environment. Failing to remediate these contaminants also fails to adequately consider and protect the communities living around the field lab who may be exposed to contamination migrating off site.

The work plan strategy of cleaning up merely a portion of soil in such a heavily contaminated area, based on a small sampling of contaminants may do more harm than good. The necessity of a RAW, when there is a legitimate and substantiated ISE, is understood, but in this case it is unclear as to why the ISE and RAW are leaving behind so many contaminants that can put the public health at risk. Our concerns should not be misinterpreted as us being against clean up actions, nor are we against the long awaited cleanup finally beginning. We understand the importance of the RAW and would be in full support of it, if it were truly protective of human health and the environment. Unfortunately, as the RAW falls short of meeting this regulatory requirement, we cannot support the RAW as it currently stands.

The cleanup must utilize Human Health RBSLs and adequate BMPs such that the majority of the contamination is not left on site, in a disturbed state, highly able to mobilize into the groundwater and the surrounding communities below the site. The rectification of this potentially dangerous cleanup, is to implement health based clean up standards that take into account all contaminants of concern found at the A1BP.

C. The RAW fails to establish how Boeing or DTSC will protect groundwater or adequately prevent migration of disturbed soils through thorough cleanup strategies and effective BMPs.

The ISE order deemed this cleanup to be imminent because the increased likelihood of natural disasters from climate change puts the geotextile fabric that currently covers the Area I Burn Pit at risk of being destroyed.¹⁸ However, human health concerns were not considered in the ISE order because “access to the site is currently prohibited.”¹⁹ Therefore, the RAW only calls for the removal of the geotextile fabric and excavation of contaminants in hotspot areas that exceed the high ecoRBSLs or, in some cases, 10 times the high ecoRBSLs (see Table 3). The RAW does not call for a new cover, or for remediation of the many contaminants known to be at the Area I burn pit, but instead is allowing those to remain on site until further cleanup is conducted, if any.

Allowing so much contamination to remain in place for years after removal of the geotextile fabric is unacceptable given 700,000 people currently live within 10 miles of the field lab and are at risk of exposure to contamination that migrates down from SSFL. Contamination from the disturbed soils can migrate into surrounding communities through groundwater, during rain events, or in the event of ever increasing wildfires due the effects of climate change--the very concern that led to the issuance of the ISE finding in the first place. To consider only what could happen to the geotextile fabric as a result of increasing intensity in weather patterns, and to ignore how those same weather patterns and natural disasters may increase the mobility

¹⁸ [SSFL Area I Burn Pit ISE Consent Order](#), pdf pg. 4.

¹⁹ [SSFL Area I Burn Pit ISE Consent Order](#), pdf pg. 5.

onsite contamination is an illogical and irresponsible oversight that poses a real threat to human health. Contamination, which will remain onsite in a disturbed state under the proposed RAW, can migrate into the surrounding communities via wind, storm water runoff and ash,²⁰ and with increasing severe weather events the likelihood of these contaminants reaching the surrounding communities increases.

In order to protect surrounding communities, the RAW must contain provisions that consider human health and ensure that contamination from the Area I Burn Pit will not be allowed to migrate offsite. Again, if the remediation is not completed to a human health protective level, the remaining disturbed contaminated soil may become *more* likely to migrate after this interim clean up action. New geotextile fabric should be used to cover disturbed areas until a background cleanup can remove all contamination from the soil.

Additionally, it is necessary to protect our groundwater resources from the potential of increased contamination migration both on and off site following this ISE clean up action. To prevent further contamination migration onsite, a lining of the holding ponds to which storm water will be routed will be necessary. Specifically a leach-proof double lining of the R1 pond that stormwater will be routed to before being released through outfall 11. There are several reasons to take this BMP action; 1) to prevent the dumping of hazardous waste into an unlined pond which may constitute a RCRA violation 2) to prevent the infiltration of contaminated stormwater run-off into the ground water which is used, and will continue to be used in Ventura county for drinking water, irrigation and recreation. The potential to contaminate the ground water on site through these holding ponds is at odds with the DTSC's obligation to remediate, not continually re-contaminate, the groundwater at SSFL, and this pollution prevention strategy of lining the holding ponds at SSFL would be a strong precautionary action to avoid further degradation of our groundwater. This would signal to the community a genuine respect and concern for the protection of our drinking water and of the groundwater that our communities will increasingly rely on in the near and distant future.

D. Failure to adequately protect wildlife by using inadequate standards and by using species that do not properly represent the wildlife habits at SSFL.

The analysis conducted for the ecological receptors for the remediation of the A1BP is woefully inadequate. The burrowing mammal receptor chosen to determine remediation depth and exposure to pollutants in soil and soil vapor is listed generally as "deer mouse." Of all of the deer mouse species (genus *Peromyscus*), the California deer mouse has the shortest and most shallow burrows. There are at least one dozen other burrowing rodents in the region that would have been more representative including multiple species of pocket gopher and kangaroo rat, and the incredibly common California ground squirrel.

The maximum depth considered for remediation for ecological receptors is six feet, which would be fine if we were to only consider California deer mice, which have average

²⁰ NPDES Permit, 2023, pdf pg. 112

burrow lengths of a few centimeters, but California ground squirrels regularly burrow to depths well below 6 ft and their complex burrow networks provide essential burrowing habitat for species that cannot burrow for themselves, including; burrowing owls (state protected species), blainville's horned lizard (state protected species), multiple snake species, western fence lizards, San Diego tiger whiptails (state protected species), among others.

Ground squirrels are also important prey for all hawks species in the buteo genus (red-tailed, red-shouldered), rattlesnakes, coyotes, bobcats, and mountain lions. Using six feet as a max remediation depth for ecological receptors has no basis in local ecology, and contamination that remains at depths below six feet will easily enter the food web through ground squirrels and the species that use their burrows.

For the reasons listed above, we charge that the standard of soil remediation depth is not representative or health protective for the ecological receptors at the site. Harmful concentrations of perchlorates, dioxins, and furans can be found in soil depths below six feet²¹, thus ecologically protective minimums have not been set for the A1BP cleanup for the wildlife that substantiated the creation of this ISE order. Since the ecological standards set for the site are inadequate, and the human health standards are completely non-existent, we argue that the RAW cleanup plan is not in compliance with Health and Safety Code sections 25323.1 which mandates a clean up work plan that is protective of the public health and the environment.²²

E. This RAW exacerbates the ongoing issues surrounding availability of public participation and trust in the cleanup of SSFL

The use of an ISE Order and RAW, which are exempt from the CEQA process, harm public trust in DTSC by barring legitimate public input and critical environmental review of the cleanup of one of the most contaminated areas of SSFL. DTSC and Boeing first promised to clean up the SSFL to protect human health in their 2007 Consent Order. The promised cleanup was to be completed in 2017. The fact that now, six years after the site should be completely clean, DTSC has released an ISE order that allows the circumvention of all CEQA regulation protections and safeguards is alarming to community members who have long awaited a thorough, not simply timely, clean up to begin.

Furthermore, this comment period, which DTSC has emphasized is a “courtesy” rather than a legal necessity, comes off as disingenuous and raises concerns as to the nature and extent of the future cleanup. For many members of the public, taking time out of their busy work days and away from their families is a tremendous ask and for some it isn’t even a possibility. DTSC and Boeing have repeatedly avoided beginning the cleanup of the SSFL and have instead released document after document (often 1000s of pages) full of excuses as to why they cannot keep their promises and why they will not comply with the original cleanup agreements, thus further delaying the cleanup. The community is tired of disappointment and empty gestures. We want a cleanup; subject to public review before finalization, that is accessible and

²¹ Huyen, [“Vertical distribution of dioxins in soil of Bien Hoa airbase, Vietnam”](#)

²² CA Health & Safety Code § 25323.1 (2022)

assures the community that our health and safety are genuine concerns and priorities by establishing human health protective standards for every aspect of the remediation process.

F. The RAW fails to clarify if future cleanup actions will fully remediate the areas insufficiently remediated by this RAW.

Although the RAW does state that this is not the final cleanup, it is unclear in the text whether or not the hotspot areas targeted for cleanup in the A1BP ISE action will later be revisited and assessed for consistency with a full cleanup to background for radiological contamination at the site, and if chemical soil contamination will be remediated to a health protective standard such as background or a residential with garden standard, according to the 2014 SRAM. All references to a later cleanup use ambiguous language that could mean that the remaining areas will be remediated but the hot spots and early action areas which are subject to this RAW will receive no further attention; this would result in the most contaminated portions of the A1BP failing to be remediated to a health protective standard.

In the November 9th, 2023 A1BP informational Zoom meeting by DTSC, Brian Faulkner said, “[This RAW is] limited in its scope. We're gonna go back at the end and, you know, do a more broad cleanup. It's gonna cover, you know, **everything that isn't covered in this initial action.**”²³ Mr. Faulkner’s comment is concerning as it implies that the later cleanup **will not** involve returning to the areas addressed in this RAW, but rather, only address the areas within the A1BP that weren’t remediated during the ISE action.

The RAW must make clear that future cleanup actions in the A1BP will result in a cleanup of the entire Area I Burn Pit site to human health-protective standards; a background cleanup for radiological contamination at the site, and that the chemically contaminated soil will be remediated to a health protective standard such as to background or to a residential with garden standard, according to the 2014 SRAM. This includes resampling and remediating any areas previously addressed, if levels of contamination are discovered which exceed human-health based standards. It is imperative that the Area I Burn Pit, one of the most heavily contaminated areas of SSFL, be cleaned to the above mentioned standards. If it is the intention of DTSC and Boeing to return to the early action areas when the full cleanup is conducted, this must be made explicitly clear in the RAW.

Conclusion

We would like the following changes to be made in the implementation of the final RAW. During the implementation of the Final RAW, DTSC may specify such additions, modifications, and revisions to the Final RAW and/or RAWIP as DTSC deems necessary to protect public health and safety or the environment or to implement the final RAW:

²³ [SSFL Boeing Area 1 Burn Pit Removal Action Work Plan Public Input Meeting](#), 1:18:26, (emphasis added).

- We would like the RAW to be amended to include all constituents that have been utilized and documented as being present at the A1BP. We would like the RAW to be updated to clean up these constituents to health protective standards; i.e., background levels, or to a residential with garden level as determined by the 2014 SRAM RSBLs for chemical constituents.
- If these changes are not made and implemented in the RAW, we would like written confirmation to be made that these ISE remediation areas will be returned to in the final soil clean up and remediated to the health protective standards outlined above. We are especially concerned that this cleanup will result in a partial cleanup, implemented as outlined in the current RAW, to serve as the final clean up action of these extensively impacted areas.
- Our recommendations for BMP's following the ISE clean up, until the background cleanup is completed, include:
 - Replacement of geotextile fabric in all remediation areas where soil has been disturbed.
 - Leech-proof double lining of the R1 pond which stormwater will be routed to before being released through Outfall 11.
 - Coordination with Los Angeles Regional Water Quality Control Board; increased sampling, monitoring and enforceable effluent limits at Outfall 11 for all constituents previously documented at the A1BP known to pose threats to public health.