



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2013-I-0372

December 13, 2013

Allen Elliott, Santa Susana Program Director
National Aeronautics and Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama 35812

Subject: Demolition and Cleanup of National Aeronautics and Space Administration-
Administered Portions of the Santa Susana Field Laboratory, Ventura County,
California

Dear Mr. Elliott:

We are responding to your request, dated July 11, 2013, and revised on November 6, 2013, for our concurrence with your determination that the demolition and cleanup activities at the National Aeronautics and Space Administration's (NASA) property at the Santa Susana Field Laboratory (SSFL) in Ventura County, California, may affect, but is not likely to adversely affect the federally endangered least Bell's vireo (*Vireo bellii pusillus*), Bruanton's milk-vetch (*Astragalus brauntonii*) and Riverside fairy shrimp (*Streptocephalus woottoni*), and the federally threatened California red-legged frog (*Rana draytonii*) and vernal pool fairy shrimp (*Branchinecta lynchi*). Your request and our response are made pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act).

You have also determined that the proposed project will have no effect on the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*) and Lyon's pentachaeta (*Pentachaeta lyonii*), and the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), spreading navarretia (*Navarretia fossalis*), California Orcutt grass (*Orcuttia californica*), Conejo dudleya (*Dudleya abramsii* ssp. *parva*), Santa Monica Mountains dudleya (*Dudleya cymosa* ssp. *ovatifolia*), Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*), and the candidate San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). As NASA and the U.S. Fish and Wildlife Service (Service) are not required to consult on species for which NASA has determined that the project will have no effect, this letter will not address these species further.

The purpose of the proposed action is to remediate the environment to a level that meets NASA's environmental cleanup responsibilities and to undertake the demolition actions necessary to support both remediation and property disposition of the NASA-administered portion of the SSFL. On December 6, 2010, NASA and the Department of Toxic Substance Control executed an Administrative Order of Consent (AOC) that stipulates specific remedial requirements, including the characterization and cleanup of soil contamination on the NASA-administered

areas of SSFL to background concentrations. The cleanup of groundwater beneath SSFL and of surface water is not stipulated in the AOC. In December 2009 the Regional Water Quality Control Board issued an order to NASA and Boeing to improve the quality of storm water discharges by removing contaminated sediments associated with two outfalls. Storm water from the NASA-administered property exits SSFL through one of the two outfalls. Demolition and cleanup activities would occur on 451.2 acres, designated as Area I, the Liquid Oxygen Area II, as well as additional outlying areas that would be affected by NASA's proposed activities (Figure 1).

The project description presented in NASA's Biological Assessment (NASA 2013) describes the proposed action as it appears in the Environmental Impact Statement (EIS). A number of potential treatment options are presented in the EIS, although currently it has not been decided which specific treatments would be used. Potential groundwater cleanup technologies that could be implemented include pump and treat, vacuum extraction, iron particle injection, heat-driven extraction, in-situ chemical oxidation, in-situ enhanced bioremediation, monitored natural attenuation and institutional controls. The potential methods for soil cleanup are presented in Table 1.

NASA conducted field surveys including vegetative community mapping, plant surveys, wildlife surveys, and wetland delineation between 2010 and 2012. These field surveys included species-specific surveys for Braunton's milk-vetch throughout the project area, a habitat assessment and surveys for California red-legged frogs, and opportunistic surveys for least Bell's vireos, Riverside fairy shrimp and vernal pool fairy shrimp as described further below.

Braunton's milk-vetch

Braunton's milk-vetch and its critical habitat occurs within Area IV and the undeveloped areas of SSFL, administered by the Department of Energy. Targeted surveys for Braunton's milk-vetch were conducted on NASA-administered properties of SSFL during 2010 and 2011. Reference locations within SSFL were visited prior to the surveys on the NASA properties in order to calibrate the biologist's search image for these plants. No Braunton's milk-vetch were observed within areas that are subject to NASA-administered cleanup activities; however, soil conditions indicate that suitable habitat may exist in the northeastern portion of NASA's Area II and in the southern portion of Area I.

California red-legged frog

California red-legged frogs and their critical habitat occur south of NASA administered portions of SSFL in Las Virgenes Canyon and upper Las Virgenes Creek. A habitat assessment was conducted on NASA-administered portions of the property in 2012 in accordance with the Service's guidance (Service 2005), and opportunistic surveys for the species were conducted in 2010, 2011, and 2012 during reconnaissance activities in suitable habitat. The habitat assessment indicated that suitable habitat for the California red-legged frog exists primarily around the R-2 ponds and the detention basin north of the Coca test stand. No individuals were detected during any survey and assessment activities; however, suitable habitat exists on the site that could support California red-legged frogs at some point during the project duration.

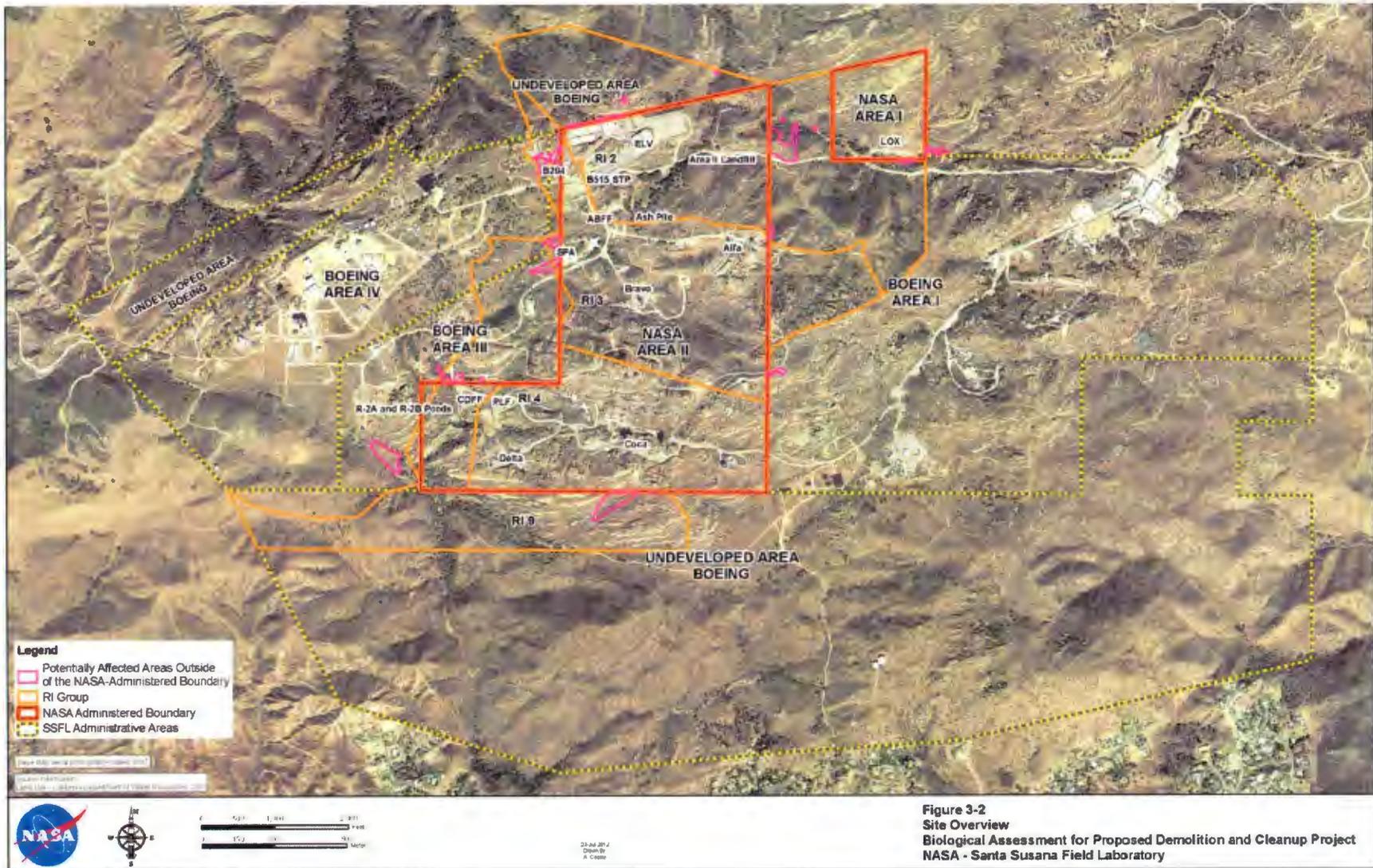


Figure 1. Site overview with NASA-administered lands outlined in Red (NASA 2013).

Table 1. Soil Remediation Technologies (NASA 2013).

Technology	Constituent Treatment	Excavation	Site Restoration	Onsite Trucks	Stockpiling	Offsite Trucks	Permits Required?	Construction	Energy Needs	Monitoring	Duration
Excavation and Offsite Disposal	All	Yes	Backfilling and reseed with native grasses	Yes	Yes	Yes	No	Staging Area	No	No	Excavation - Several Years Transport - 5 to 10 years
Excavation, Onsite CAMU, and Encapsulation	All	Yes	Backfilling and reseed with native grasses	Yes	Yes	No	Landfill Siting Permit	CAMU	No	Yes	Excavation - Several Years CAMU - 18 months
Soil Vapor Extraction	VOCs	No	No	Yes	No	No	VOC Emission Permit	SVE Wells	Yes	Yes	Months to Years
Ex-situ Treatment Using Land Farming	VOCs	Yes	Replacement of soils and reseed with native grasses	Yes	Yes	No	No	Staging/ Treatment Area	No	Yes	Months to Years
Ex-situ Treatment Using Thermal Desorption	VOCs, SVOCs	Yes	Replacement of soils and reseed with native grasses	Yes	No	No	VOC/ SVOC Emission Permit	Temporary Thermal Desorption Chamber	Yes	Yes	Months to Years
In-situ Physical Treatment Using Soil Mixing	VOCs, SVOCs	No	Grading of disturbed soils	Yes	No	No	Injection Permit	No	No	Yes	Months to Years
In-situ Chemical Oxidation or Reduction	VOCs, SVOCs	No	Grading of disturbed soils	Yes	No	No	Injection Permit	Injection Wells or Boreholes	No	Yes	Months to Years
In-situ Anaerobic or Aerobic Biological Treatment	VOCs, SVOCs	No	Grading of disturbed soils	Yes	No	No	Injection Permit	Injection Wells or Boreholes	No	Yes	Months to Years
Phytoremediation	VOCs, some metals, and PCBs	No	Yes	Yes	No	No	No	Tree/Vegetation Planting	No	Yes	Decades
Monitored Natural Attenuation	VOCs, SVOCs	No	N/A	No	No	No	No	No	No	Yes	Hundreds of Years

Notes:

CAMU = corrective action management unit

N/A = not applicable

PCB = polychlorinated biphenyl

SVOC = semivolatile organic compound

VOC = volatile organic compound

Least Bell's vireo

Least Bell's vireos are known to occur within Ventura County in the Calleguas Creek and Santa Clara River watersheds. The closest reported nesting location occurs approximately 9 miles northwest of the site. Habitat for least Bell's vireo within NASA's portion of SSFL consists of approximately 2.1 acres of fragmented mulefat riparian scrub, of this approximately 1.5 acres may be impacted by the cleanup. Opportunistic surveys for least Bell's vireos were conducted during 2010 and 2011. A single least Bell's vireo was sighted during August 2011, and was determined to possibly be a migrating individual.

Riverside and vernal pool fairy shrimp

Suitable habitat for Riverside and vernal pool fairy shrimp typically consists of vernal pool features, which usually occur in areas of heavy clay. The predominant soil type at SSFL is sand, and prominent rock outcrops covering the landscape are sandstone features. No vernal pools exist in the project area. Surveys conducted in 2010 and 2011 indicated that suitable habitat may exist for the Riverside and vernal pool fairy shrimp within the project area, near small rock basins in sandstone outcrops and two seasonally ponded wetland areas. Opportunistic surveys for the Riverside and vernal pool fairy shrimp were conducted in January 2012; however, due to low winter rainfall, the basins were dry. Although the species were not observed during surveys, Riverside and vernal pool fairy shrimp have the potential to occur within the project area. However, the quality and quantity of suitable habitat appears to be very limited onsite.

NASA proposes to implement the following measures to avoid adverse effects to listed species from the proposed project:

1. NASA will conduct protocol-level surveys in suitable habitats for least Bell's vireo prior to the anticipated construction startup date. If the surveys indicate the presence of least Bell's vireos, then consultation with the Service will be initiated before clearing or any construction activities that may adversely affect least Bell's vireo begin;
2. NASA will conduct protocol-level surveys within suitable habitat for California red-legged frogs before the anticipated construction startup date and during construction. If the surveys indicate the presence of the California red-legged frog before or during construction, then any construction activities that could adversely affect the species will be halted and consultation with the Service will be initiated before construction activities are restarted;
3. NASA will conduct surveys for Braunton's milk-vetch in suitable habitat prior to construction and will avoid any occurrence of the species during construction by erecting fences and demarcating exclusion areas; and
4. NASA will avoid the rock basins where Riverside and vernal pool fairy shrimp may occur during construction. The rock basins will not be affected by excavation for soil remediation. Where rock basins occur near construction areas, exclusion fencing will be set up. Consultation with the Service will occur if the rock basins are to be affected.

We concur with your determination that the proposed project may affect, but is not likely to adversely affect, the least Bell's vireo, California red-legged frog, Braunton's milk-vetch, Riverside fairy shrimp and vernal pool fairy shrimp. Our concurrence is based on the following:

Braunton's milk-vetch

- Braunton's milk-vetch is not known to occur within the portion of SSFL subject to cleanup by NASA; and
- NASA proposes to conduct surveys in suitable habitat prior to construction and will avoid any occurrences of the species.

California red-legged frog

- Suitable habitat for California red-legged frogs within the project area is of limited quantity and the species has not been previously documented within the project area; and
- NASA will conduct surveys in accordance with Service guidance in all suitable habitats prior to construction and will initiate formal consultation if the species is detected.

Least bell's vireo

- The suitable habitat for least Bell's vireo within the project area is of limited quality and quantity, and nesting has not been previously documented within the project area; and
- NASA will conduct surveys in accordance with Service guidance in all suitable habitats prior to construction and will initiate formal consultation if the species is detected.

Riverside and vernal pool fairy shrimp

- The suitable habitat for Riverside and vernal pool fairy shrimp within the project area is of limited quality and quantity, and the species was not observed during opportunistic surveys;
- Rock basins, where the species may occur, will be avoided completely during construction. Where rock basins occur near construction areas, exclusion fencing will be erected. The rock basins will not be affected by excavation for soil remediation during SSFL project activities; and
- Additional dialogue and consultation with the Service will occur if rock basins would be affected.

This concludes informal consultation on the subject project pursuant to section 7(a)(2) of the Act. If the proposed action changes in any manner or if new information reveals that listed species in the project area may be affected by the proposed action, NASA should contact us

Allen Elliott

7

immediately and suspend all activities that may affect listed species until the appropriate level of consultation is completed. If you have any questions regarding this letter, please contact Jenny Marek of my staff at (805) 644-1766, extension 325.

Sincerely,



Jeff Phillips

Deputy Assistant Field Supervisor

cc:

John Jones, Department of Energy

Ray Leclerc, California Department of Toxic Substance Control

Mary Meyer, California Department of Fish and Wildlife

REFERENCES

- National Aeronautics and Space Administration. 2013. Biological Assessment for the Demolition and Cleanup Project at Santa Susana Field Laboratory in Ventura County, California. George C. Marshall Space Flight Center, Huntsville, Alabama. Dated November 2013.
- U.S. Fish and Wildlife Service. 2005. Revised guidance on site assessment and field surveys for the California red-legged frog.