

National Aeronautics and Space Administration



Record of Decision

**Environmental Impact Statement for
Proposed Demolition and
Environmental Cleanup Activities at
Santa Susana Field Laboratory**

Groundwater Cleanup

October 2018

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RECORD OF DECISION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Groundwater Cleanup Activities at Santa Susana Field Laboratory

A. Background

The National Aeronautics and Space Administration (NASA) prepared a *Final Environmental Impact Statement* (FEIS) for the *Demolition and Clean-up Activities at Santa Susana Field Laboratory (SSFL)* in 2014. After a required 30-day waiting period, NASA issued a Record of Decision (ROD) to move forward on the demolition of facilities at SSFL. A decision was made at the time of publication of the FEIS to defer issuing RODs for the cleanup of soil and groundwater until further analysis and planning were complete. In 2017, the California Department of Toxic Substances Control (DTSC) released a Program Environmental Impact Report (PEIR) that described significant and unavoidable impacts associated with soil cleanup. NASA provided over 300 comments to DTSC and expressed concerns. While NASA awaits DTSC's next steps on soil, NASA believes it is prudent to continue to implement cleanup activities as soon as possible and has decided to move forward on groundwater remediation. NASA is issuing this ROD for cleanup of groundwater at SSFL. This groundwater ROD includes a summary of the National Environmental Policy Act (NEPA) process completed in the FEIS, public involvement in the decision-making process, the alternative considered, key environmental issues evaluated, statement of the decision made, and the basis for the decision.

A.1 Purpose and Need for the Proposed Action

SSFL consists of 2,850 acres of open, rocky terrain above California's Simi Valley in southeastern Ventura County, roughly 30 miles northwest of Los Angeles. Since 1948, site activities have included research, development, and testing of liquid-fueled rocket engines and components. In 1970, NASA acquired 451.2 acres of the site. The site was used actively from the mid-1950s through the early 1980s to research, develop, and test rocket engines, and then occasional testing occurred until 2006. In 2009, NASA determined that the property and structures were no longer required to support its mission and reported them as excess to Congress. The General Services Administration (GSA) conditionally accepted NASA's report of excess pending NASA's certification that remedial action necessary to protect human health and the environment with respect to hazardous substances on the property has been completed or that the Governor of California concurs with the suitability of the property for transfer in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, Section 120(h)(3)(C).

In August 2007, NASA, The Boeing Company (Boeing), the U.S. Department of Energy (DOE), and DTSC signed a Consent Order for Corrective Action (State of California DTSC Docket No. P3-07/08-003, 2007; hereby referred to as "2007 Consent Order") that addressed the cleanup of soils and groundwater at SSFL (DTSC, 2007). The 2007 Consent Order identified activities for the cleanup of soil, groundwater, and surface water at SSFL.

Subsequently, on December 6, 2010, NASA and DTSC executed an Administrative Order on Consent (AOC) for Remedial Action (State of California DTSC Docket No. HAS-CO_10/11-038, 2010; hereby referred to as "2010 AOC") that stipulated specific remedial requirements, including the characterization and cleanup of soil contamination on the NASA-administered areas of SSFL to Look-Up Table values (DTSC, 2010) and in accordance with NEPA. The 2010 AOC set requirements for soil cleanup and does not relate to groundwater cleanup. Consequently, the 2007 Consent Order sets forth the commitments relevant to this groundwater ROD.

The Proposed Action relevant to this groundwater ROD is to remediate groundwater contamination on the NASA-administered property of SSFL using a risk-based cleanup methodology described in the 2007 Consent

Order. These activities will enable NASA to meet its commitments under the 2007 Consent Order, prepare the property for disposition, and support NASA's mission needs.

B. The Environmental Impact Statement

B.1 The NEPA Process Completed

On July 6, 2011, NASA published a Notice of Intent (NOI) in the *Federal Register* (FR) (76 FR 39443-39444) to prepare an EIS and conduct scoping for the proposed demolition and cleanup activities at the NASA-administered portion of SSFL. The same day, the notice was sent to more than 600 e-mail addresses on the SSFL Program distribution list. The NOI invited agencies, organizations, tribal governments, individuals, and interested parties to participate in developing the scope and identifying environmental issues for the EIS. The NOI announced NASA's intent to use the NEPA process in accordance with Title 36 *Code of Federal Regulations* (CFR) Section (§) 800.8(c) to comply with Section 106 of the National Historic Preservation Act (NHPA) in lieu of the procedures set forth in § 800.3 through 800.6. The NOI was also published in local newspapers: *The Daily News*, *Simi Valley Acorn*, *Ventura County Star*, and *La Opinión*. The NOI announced public scoping meetings that were held in Chatsworth, Simi Valley, and West Hills on August 16, 17 and 18, 2011. NASA accepted written and verbal comments at the scoping meetings and throughout the extended 74-day scoping period (July 8 through September 19, 2011). NASA received 231 submittals from agencies, organizations, and individuals that collectively contained 756 individual comments.

An informational meeting was held on March 27, 2012, to present an EIS update to the public. The topics presented were an overview of the EIS process, how impacts were being assessed, and potential remediation technologies. As with the scoping meetings, displays of technical information were available for the public to view and ask questions about and presentation materials were posted on the website created for the project, <https://ssfl.msfc.nasa.gov/>.

NASA published a Notice of Availability (NOA) of the Draft EIS (DEIS) in the *Federal Register* on August 2, 2013, with a 45-day public comment period. At the request of the public, NASA extended the comment period by 15 days, providing a 60-day comment period. This was announced in a notice published in the *Federal Register* informing the public that comments would be accepted for an additional 15 days to October 1, 2013. Due to the government shutdown that occurred on October 1, 2013, NASA accepted comments through October 17, 2013. NASA received 2,185 submittals on the DEIS, containing 4,164 individual comments. Comments from tribes, federal, state, and local agencies, included, but were not limited to, the U.S. Department of the Interior, U.S. Environmental Protection Agency (EPA), Advisory Council on Historic Preservation (ACHP), California Office of Historic Preservation, California Department of Fish and Wildlife (CDFW), the Santa Ynez Band of Chumash Indians (SYBCI), and other state-recognized tribes. Copies of the agency comments and responses to them are included as Appendix K of the FEIS.

NASA published a NOA of the FEIS in the *Federal Register* (Notice 14-025) on March 14, 2014. A copy of the published NOA can be viewed at https://www.nasa.gov/sites/default/files/files/FR_Final_EIS_SSFL.pdf.

The EPA published a NOA for NASA's DEIS (Notice 13-089) and public comment period on August 2, 2013. It can be viewed at <https://www.gpo.gov/fdsys/pkg/FR-2013-08-02/html/2013-18700.htm>. EPA published a NOA for NASA's FEIS (No. 20140070) on March 14, 2014. It can be viewed at <https://docs.regulations.justia.com/entries/2014-03-14/2014-05674.pdf>. The EPA issued a finding of no objection to the Proposed Action regarding NASA's FEIS on April 10, 2014.

The NHPA requires that NASA consult with federal, state, and local agencies, Native American Tribes, other organizations, and members of the public having a potential interest in the Proposed Action. More than 35 individuals were involved in the consultation process that was conducted as part of the NEPA process for this EIS. Consulting parties have varying interests in the site and include representatives from federally recognized tribes and members of state and local tribes. Consultation culminated with measures to address

the adverse effects to historic properties stipulated in the Programmatic Agreement (PA) attached to this groundwater ROD.

The ROD for the demolition activities described in the *Final Environmental Impact Statement for the Demolition and Clean-up Activities at Santa Susana Field Laboratory* was signed in April 2014. Demolition activities began in February 2015 and are expected to be completed by the end of 2018. The decision in the 2014 ROD was to proceed with demolition activities and defer the decision on specific techniques that will be used to accomplish the soil and groundwater cleanup.

B.2 Alternatives Considered

NASA evaluated two alternatives in the FEIS: The Proposed Action and the No Action Alternative.

B.2.1 Proposed Action

The Proposed Action relevant to this ROD is to remediate groundwater contamination on the NASA-administered property of SSFL. Groundwater would be remediated to reduce risk from chemicals of concern (COCs). The COCs were identified following the DTSC-approved *Standardized Risk Assessment Methodology (SRAM) Revision 2 Addendum* (MWH, 2014) as documented in the *Human Health and Ecological Risk Assessments for NASA AIGs* (NASA, 2017a). COCs were delineated in the *NASA Groundwater RFI Report* (NASA, 2017b). Specifically, the following technologies described in the FEIS would be considered for COC remedial implementation as necessary, individually, and in combination:

- **Pump and Treat:** This technology extracts groundwater by pumping extraction wells and then treats the groundwater through several processes including particulate filters, ion-exchange vessels, liquid phase granular activated carbon, and ultraviolet/peroxidation. As part of a groundwater interim measure, a treatment system has already been designed and constructed by Boeing for treating groundwater in their portion of the site and the system will also be used by NASA. If the capacity of the Boeing system is exceeded, the need for a new system will be evaluated. If needed, separate well-head treatment systems with targeted COC treatment (e.g., granulated activated carbon treatment of volatile organic compounds [VOCs]) may be used for a pump and treat action.
- **Vacuum Extraction, specifically, Bedrock Vapor Extraction:** This technology is used to recover VOCs from fractured media above the zone of water saturation. The process involves applying a vacuum through extraction wells using a blower system and then filtering the air through vapor-phase granular activated carbon prior to it being discharged to the atmosphere.
- **In Situ Enhanced Bioremediation:** This technology involves the addition of a carbon substrate and supplemental nutrients that can provide a food source for indigenous bacteria to grow and degrade chlorinated ethenes and other organics through the process of enhanced reductive dechlorination or other anaerobic biological degradation pathways. In some instances, it may be necessary to augment treatment sites with specific bacteria if the indigenous bacteria are not capable of providing the type of microbial reductive processes required to treat COCs.
- **Monitored Natural Attenuation:** Extensive bench-scale testing has demonstrated that several biologic and abiotic processes degrade trichloroethene and its daughter products, both in groundwater and within the sandstone rock matrix of the Chatsworth Formation at SSFL. These processes can be expected to contribute to natural attenuation of the VOC plume and source zones. A monitoring program would evaluate the effectiveness of the natural attenuation process.
- **Institutional Controls:** Methodology to manage access to the site so that the number of potential groundwater exposure pathways are reduced. Institutional controls consist of signs and deed restrictions to prevent access to specific locations, access to groundwater, and how property can be used.

B.2.2 No Action Alternative

Under the No Action Alternative, NASA would not conduct groundwater treatment beyond the groundwater interim measure and interim source removal action activities completed, or currently being conducted, under separate regulatory direction. Ongoing groundwater and surface water sampling being conducted on the site would continue. Once these ongoing remedial programs are concluded, no further remedial action would occur. Contaminants not captured by these programs would remain in place or attenuate naturally over time. No ongoing monitoring would occur as part of this natural attenuation.

The No Action Alternative would not meet NASA's obligations under the 2007 Consent Order or the Purpose and Need, as previously described. The No Action Alternative was used as a baseline against which to assess the environmental impacts of the Proposed Action and other action alternatives.

B.3 Key Environmental Issues Evaluated

The FEIS evaluated a full range of environmental issues, including air quality and greenhouse gas (GHG) emissions, biological resources, cultural resources, soils, landslide potential, topography, paleontological resources, and water resources. Of these, the most noted in public and regulatory agency comments and questions were cultural and biological resources, which are briefly described below.

- **Historic Properties:** Historic Properties are archeological and architectural resources, including Traditional Cultural Properties (TCPs) and cultural landscapes, that are listed on, or are eligible for listing on, the National Register of Historic Places (NRHP). Historic architectural properties within the project area include the Alfa, Bravo, and Coca Test Area Historic Districts as detailed in FEIS Table 3.3-2. These Districts in turn include nine structures that are individually eligible for listing in the NRHP.

There are two NRHP-eligible/listed archeological sites within the project area, an NRHP-eligible archeological district, and numerous archeological sites that have not yet been evaluated for eligibility. The entire SSFL property has also been identified as a NRHP-eligible TCP.

SSFL has been formally designated by the SYBCI as an Indian Sacred Site under Executive Order 13007.

- The Proposed Action could affect historic properties at SSFL. In 2014, NASA entered into a NHPA PA with the California State Historic Preservation Officer (CA SHPO), ACHP, and SYBCI for the management of historic properties that may be impacted by cleanup activities (see attached). The Proposed Action falls under this Agreement; thus, no further consultation under Section 106 is required.
- **Biological Resources:** Biological resources refer to vegetation communities, wildlife, sensitive species, invasive species, and wetlands occurring on the NASA-administered portion of SSFL. The local distribution and density of plant communities varies substantially at SSFL due to differences in habitat quality and historical disturbances, such as development or wildfires. FEIS Table 3.4-1 lists the habitat types identified during the fall 2010 habitat mapping (NASA, 2011a) and FEIS Figure 3.4-1 shows the vegetative cover across the region of influence and surrounding areas. Descriptions of these habitat types are provided in Appendix D of the FEIS. Wildlife identifications during the surveys included 10 butterfly species, 11 reptile and amphibian species, 59 bird species, and at least 14 mammal species. SSFL habitat and species diversity, physical attributes, and geographic location make the area a potentially important route for species migrations. Open space at SSFL could play a role for habitat linkage among the Santa Susana Mountains, the Simi Hills, and possibly, the Santa Monica Mountains (NASA, 2011a). The U.S. Fish and Wildlife Service (USFWS) has identified eight threatened or endangered listed plant species that potentially are located on the NASA-administered portion of SSFL (USFWS, 2012). FEIS Table 3.4-2 lists these species. One state-listed species, one fully protected species, and nine Species of Special Concern have been identified within the vicinity of SSFL (NASA, 2011a, 2011b). FEIS Table 3.4-3 lists these species. The groundwater remediation activities described in the Proposed Action could affect biological resources at SSFL. However, NASA will minimize these impacts through the commitments detailed in Section E of this ROD.

B.4 Environmental Consequences

Overall impacts related to groundwater cleanup are anticipated to be mostly negligible to minor, except for moderate impacts to cultural resources. There are no expected significant impacts associated with groundwater cleanup.

B.4.1 Cumulative Impacts

The cumulative impacts evaluated primarily focused on the additional cleanup activities that will be conducted by Boeing and the DOE. The cumulative impacts were evaluated based on NASA instituting mitigation measures during implementation of the Proposed Action, which, for most resource areas, resulted in a diminished overall impact. The quantity of soil anticipated to be removed from SSFL would range between 2 and 2.5 million cubic yards among NASA-administered, Boeing, and DOE sites. The major impacts associated with the activities of the three parties would be to cultural and biological resources, as previously described for the NASA activities. An additional resource area, air quality and GHG emissions, would have the potential for a significant impact because of the cumulative impacts of material-hauling activities that would be performed by the three parties.

C. Assessment of the Analysis

The implementation of the groundwater portion of the Proposed Action may result in adverse impacts to cultural resources with respect to Section 106 of the NHPA, specifically, impacts to archeological resources such as the Burro Flats Cave and the TCP/Indian Sacred Site. NASA will adhere to the commitments made in the NHPA PA regarding these activities.

Migratory birds and sensitive wildlife species have been observed in the NASA-administered portions of SSFL. Protected plant species may also be present near groundwater cleanup activities. Wildlife species would be expected to vacate the area during groundwater remediation activities and possibly would return to the area when these activities end. If a protected species was harmed during groundwater cleanup, it would be an impact. However, NASA will perform pre-construction surveys to avoid impacts to species per its agreement with the USFWS and obtain necessary permits from the California Department of Fish and Game for potential impacts to plant species.

C.1 Incomplete and Unavailable Information

The EPA rated the DEIS as having Environmental Concerns-Insufficient Information (EC-2), recommending to NASA that the FEIS offer specific preferred treatment options for soil removal and groundwater cleanup. NASA acknowledged that some studies relevant to the Proposed Action were not complete in the FEIS. Such studies included the site characterization work, treatment technology studies, and archeological studies.

NASA has reviewed a broad range of reasonable remedial technologies that could achieve the cleanup goals for both the SSFL soil and groundwater cleanups. The FEIS examined the potential environmental effects from each cleanup technology that was deemed feasible, implementable, and effective. These treatment technologies were further developed in the draft Corrective Measures Study (CMS) for SSFL, which is a work in progress and can be made available upon request upon completion. The CMS summarizes the key issues related to COCs in groundwater at SSFL and identifies overall cleanup objectives, media cleanup objectives, and target treatment areas.

Once cleanup areas are finalized based on site characterization work, NASA may conduct additional archeological investigations in areas in which NASA plans to excavate soil to achieve cleanup goals based on the NHPA PA (see attachment) to determine how to approach archeological sites during cleanup activities.

D. Additional Information

D.1 Consultation and Coordination

While preparing the EIS, NASA coordinated related environmental review requirements to assist in the decision-making process. Consultations pursuant to the NHPA, the Endangered Species Act, and the Clean Water Act (CWA) were accomplished concurrently with the EIS preparation. Also, throughout the EIS process, NASA actively engaged with DTSC pertaining to the 2007 Consent Order and 2010 AOC.

D.2 Comments Received on the FEIS

The waiting period following the release of the FEIS closed on April 14, 2014. NASA received a total of one agency (EPA) comment letter and several private party comments. In addition, NASA received a few requests for FEIS copies and process clarification questions. The EPA and private party comments pertained to the requirements associated with soil cleanup.

D.3 Future Consultations

NASA's ongoing commitments regarding significant cultural resources include coordination with the ACHP, the CA SHPO, and the SYBCI for review and comment on documents and studies carried out under the stipulations of the PA. NASA also must address unanticipated discoveries throughout the cleanup process and produce annual reports regarding the status of the commitments. These are described in further detail in the PA that is attached to this ROD.

E. Mitigation

NASA will implement mitigation measures and best management practices to reduce the magnitude of the impacts of the Proposed Action, as applicable. The activities NASA is committed to conducting during the groundwater cleanup portion of the Proposed Action are summarized in Table 6.1-1 of the FEIS.

TABLE 6.1-1

Best Management Practices (BMPs) and Mitigation Measures

NASA ROD EIS for Proposed Demolition and Environmental Cleanup Activities at SSFL, Ventura, California

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Soils BMP-1	NASA would use facilities currently in place to minimize the potential impacts of landslides, should they occur. If a new facility is required, the site would be evaluated for landslide potential, and effective means of mitigating the identified causes of potential landslides would be assessed before construction. New access roads, staging areas, and stockpile areas would follow natural contours and be graded to minimize cut-and-fill. Also, these areas would be sloped and, if necessary, compacted to prevent the possibility of slope failure. Where new roads and other facilities are necessary, they would be located to avoid areas identified by the State of California (1998) and geologists in field inspections as having the potential for rock falls. Where such avoidance is impossible, appropriate engineering design and construction measures would be incorporated into the project designs to minimize potential damage to project facilities. Access roads would be inspected periodically, particularly after heavy rains and earthquakes. Access roads and staging in steep portions of the site would be avoided, if possible, after heavy rain events, when increased loads could lead to slope failure.	4.2 – Soils, Landslide Potential, Topography, and Paleontological Resources
Cultural	See Stipulation section of the attached PA.	4.3 – Cultural Resources

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Biology BMP-2	<p>In conjunction with reseeded and when topsoil is unavailable, soil stabilization BMPs would be used, including soil binders, erosion mats, gabion walls, and erosion control check dams. Soil amendments also would be used to encourage successful reseeded. Appropriate restoration measures would be prescribed based on site location, slope, and remoteness.</p> <p>A Stormwater Pollution Prevention Plan (SWPPP) and an Erosion Control Plan (ECP) would be updated and implemented to guide erosion control methodology. In addition, a project Dust Control Plan would be developed to prevent soil erosion.</p>	<p>4.2 – Soils, Landslide Potential, Topography, and Paleontological Resources</p> <p>4.4 – Biology</p>
Biology BMP-3	<p>Once groundwater remediation reaches the desired level, wells would be removed, and the area would be reseeded.</p>	4.4 – Biology
Biology BMP-4	<p>Individuals working on cleanup activities would be trained to identify federal- and state-listed species. If a listed species were observed during operations, operations would halt, and a qualified wildlife biologist would be called to the site. If the species were validated as a listed species, the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW) would be consulted.</p>	4.4 – Biology
Biology BMP-5	<p>NASA would obtain a Clean Water Act (CWA) Section 404 Permit from the U.S. Army Corps of Engineers and a CWA Section 401 permit from the Regional Water Quality Control Board (RWQCB) for the discharge or dredge of material into jurisdictional waters of the United States.</p>	4.4 – Biology
Biology MM-2	<p>NASA would avoid Santa Susana tarplant to the extent possible. Individuals working on cleanup and demolition activities would be trained to identify the Santa Susana tarplant and avoid it.</p>	4.4 – Biology
Biology MM-3	<p>NASA would implement a Weed Management Plan to eradicate noxious and invasive species as they appear on sites using federally approved methodologies.</p>	4.4 – Biology
Biology MM-4	<p>Project sites would be surveyed for the presence of migratory bird nests by a qualified biologist prior to commencing work.</p>	4.4 – Biology
Biology MM-5	<p>The following mitigation measures were identified by the USFWS to mitigate potential impacts to federally threatened or endangered listed species (USFWS, 2013). Prior to any construction activities, NASA will conduct protocol-level surveys in all suitable habitats for Brauntern's milk-vetch, California red-legged frog, Least Bell's vireo, Riverside fairy shrimp, and vernal pool fairy shrimp. If a federally listed species is identified, activities will halt, and NASA will initiate formal consultation with the USFWS, during which time additional mitigation measures will be developed. Further additional dialogue will occur with the USFWS if rock basins are impacted by the Proposed Action. Where rock basins occur near construction areas, exclusion fencing will be set up. Based on the actions described here, there are no expected impacts to any federally listed species.</p>	4.4 – Biology
Traffic MM-1	<p>A NASA Construction Transportation and Control Plan (N-CTCP)— which includes a traffic control plan, parking plan, existing and construction traffic operations, motorist information strategies, truck safety plan, hazardous materials transport plan, and ridesharing plan—will be developed. The N-CTCP would include the proposed activities and be implemented through the completion of cleanup activities, which is planned for 2017. NASA will coordinate traffic control plans with The Boeing Company (Boeing) and the U.S. Department of Energy (DOE).</p>	4.5 – Traffic and Transportation

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Water BMP-1	<p>Site activities would take place in accordance with the statewide General Permit for Stormwater Discharges Associated with Construction Activity (Order No. 2009-0009-DWQ [National Pollutant Discharge Elimination System No. CAS000002]). As required by this permit, NASA would prepare an SWPPP and an ECP that specifies site management activities to protect stormwater runoff and minimize erosion during construction, operation, and maintenance of the project. NASA also would continue monitoring offsite drainages for increased sediment load and contamination. The SWPPP would include the protocol for proper storage and use of hazardous materials, as well as spill response procedures.</p> <p>These management activities would include construction stormwater BMPs (silt fences, sand bags, straw wattles, and tire washes), dewatering runoff controls, containment for chemical storage areas, and construction equipment decontamination. The combined effect of demolition and remediation activities on the potential to increase surface water and groundwater pollution would be minor, given the regulatory controls in place to protect water quality and the assumption that NASA would adhere to these requirements.</p>	<p>4.2 – Soils, Landslide Potential, Topography, and Paleontological Resources</p> <p>4.4 – Biology</p> <p>4.6 – Water</p> <p>4.12 – Hazardous and Nonhazardous Materials and Waste</p>
Noise MM-1	NASA would limit proposed demolition and environmental cleanup activities and hauling to daytime hours.	4.11 – Noise
Noise MM-2	Construction equipment and trucks would be maintained in good working order and in accordance with manufacturers' recommendations.	4.11 – Noise
Air Quality BMP-1	<p>Fugitive dust emissions would be controlled by measures prescribed by Ventura County Air Pollution Control District (VCAPCD) Rule 55 (VCAPCD, 2008a), which are currently implemented by NASA as part of its interim source removal action (ISRA) program (NASA, 2010), and VCAPCD Rule 74.29 (VCAPCD, 2008b), some of which are consistent with VCAPCD Rule 55. The relevant measures available to reduce both onsite and offsite fugitive dust emissions are summarized in the following bullets; implementation of these measures would be further described in the Dust Control Plan:</p> <ul style="list-style-type: none"> • Unpaved Roads: Cover road with a low-silt content material such as recycled road base or gravel to a minimum of 4 inches or reduce speed to 15 miles per hour; restrict public access; and treat with water, mulch, or a non-toxic chemical dust suppressant that complies with the applicable air and water quality government standards. It is expected that reduced vehicle speeds could reduce fugitive dust emissions by up to 57 percent, whereas application of water or non-toxic dust suppressants could reduce fugitive dust emissions by up to 55 and 84 percent, respectively (Countess Environmental, 2006). • Stockpiles: Enclose material in a three- or four-sided barrier equal to the height of the material; apply water at a sufficient quantity and frequency to prevent wind-driven dust; apply a non-toxic dust suppressant that complies with the applicable air and water quality government standards; or install and anchor tarps, plastic, or other material. It is expected that enclosure of the material could reduce fugitive dust emissions by up to 75 percent, whereas application of water or non-toxic dust suppressants could reduce fugitive dust emissions by up to 90 percent (Countess Environmental, 2006). 	4.7 – Air Quality

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Air Quality BMP-1 <i>cont.</i>	<ul style="list-style-type: none"> • Material Loading: Load materials carefully to minimize the potential for spills or dust creation. Implement water spraying as needed to suppress potential dust generation during loading operations. Take care to apply dust suppression water to the top of the load or source material to avoid wetting the truck tires. Do not perform loading during unfavorable weather conditions, such as high winds or storms. Material spilled during loading would be collected for subsequent loading. After loading, trucks would pass through the decontamination and inspection station before being weighed and departing from SSFL. Decontaminate trucks by dry brushing before they leave the staging and loading areas to prevent track out. Materials from the truck decontamination would be collected and hauled out with the last load of soil. It is expected that application of water during loading operations could reduce fugitive dust emissions by up to 69 percent, whereas ceasing loading operations during unfavorable weather conditions could reduce fugitive dust emissions by up to 98 percent (Countess Environmental, 2006). Fugitive dust emissions after loading would be addressed through the paved road measures described below. • Material Hauling: Use properly secured tarps that cover the entire surface area of the load or use a container-type enclosure, maintain a minimum of 6 inches of freeboard, or water or otherwise treat the bulk material to minimize loss of material to wind or spillage. It is expected that use of secured tarps and maintaining 6 inches of freeboard could reduce fugitive dust emissions by up to 91 percent, whereas watering bulk materials could reduce fugitive dust emissions by up to 69 percent (South Coast Air Quality Management District, 2007). Fugitive dust emissions during offsite material hauling would be further minimized by the paved road measures described in the following text. • Paved Roads: Install a pad near the SSFL exit consisting of washed gravel to a depth of at least 6 inches, extending at least 30 feet wide and 50 feet long; pave the surface near the SSFL exit at least 100 feet long and 20 feet wide; use a rumble grate to remove bulk material from tires and vehicle undercarriages before vehicles exit SSFL or install and use a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit SSFL. It is expected that installation of a pad or paved surface could reduce fugitive dust emissions by up to 46 percent, whereas installation of a rumble grate or wheel washing system could reduce fugitive dust emissions by up to 80 percent (Countess Environmental, 2006). • Soil Aeration: Use a certified organic vapor analyzer at least once every 15 minutes during excavation and grading activities to confirm the aeration of contaminated soil is minimized or prevented. Records must be kept throughout the environmental cleanup period, consistent with VCAPCD Rule 74.19 (VCAPCD, 2008b). <p>The greater the amount of soil that is disturbed by any of the methods described above, the greater the amount of contaminated fugitive dust that would potentially be released.</p>	4.7 – Air Quality <i>cont.</i>
Air Quality MM-3	<p>NASA would develop a Dust Control Plan for the project to protect soils from wind erosion and prevent future fugitive dust emissions to the extent feasible. As described in Section 4.9, dust monitors would be placed around the work site to monitor the amount of airborne dust. The air monitors could be equipped to record dust levels on a specified interval, with an alarm to notify workers if dust levels reach a specified level. After project activities are completed in an area, native seed mix would be planted to replace native vegetation destroyed during excavations, road construction, soil remediation, and other activities (new vegetation would not be planted in areas that did not have plants previously). Restoring the native vegetation would prevent soil erosion and reduce fugitive dust emissions.</p>	4.2 – Soils, Landslide Potential, Topography, and Paleontological Resources 4.4 – Biology 4.7 – Air Quality 4.9 – Health and Safety 4.12 – Hazardous and Nonhazardous Materials and Waste

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Infrastructure BMP-1	Prior to excavation activities, NASA would be required by California law (California Government Code Sec. 4216, <i>et seq.</i>) to contact California's Dig Alert and potentially a third-party utility-locating service to mark existing utility lines correctly within, and near, the remediation areas. In situations where utility lines require temporary disconnection or a permanent relocation, coordination with the utility provider would minimize the impact of remedial activities.	4.10 – Site Infrastructure and Utilities
Infrastructure MM-1	The buildings (except those protected as historic sites) and portions of the existing utilities (natural gas, sewer, and test support lines) would not be required during remedial operations. By scheduling the demolition and removal of these portions of the site infrastructure before remedial actions commence, NASA would be able to remove the impact of these features on the progress of the remedial effort	4.10 – Site Infrastructure and Utilities
Haz BMP-1	<p>Hazardous materials and wastes from demolition and operation of remediation technologies would be handled in compliance with applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, prevention and response to spills and releases, reporting, and record keeping.</p> <p>Per these regulatory standards, hazardous wastes generally would be loaded directly into bins for transport and offsite disposal; however, containment, if needed, would be in containers that prevent the release of material or hazardous content. Bins containing hazardous wastes would be kept securely closed, except when wastes were being transferred into or out of them and would be transported for offsite disposal within the prescribed 90-day accumulation period (NASA, 2011c).</p>	4.12 – Hazardous and Nonhazardous Materials and Waste
Haz BMP-2	As required by California Health and Safety Code Chapter 6.95 and the California Code of Regulations, Title 19, a Hazardous Materials Business Plan would be developed. This plan would describe appropriate storage, containment, and safety protocols for use of hazardous materials during the remediation; emergency procedures to be followed in the event of a release; instructions for performing fueling and maintenance operations on vehicles and equipment onsite; and other protocols so that hazardous materials would be stored and handled appropriately. (A Hazardous Materials Business Plan has been completed for the groundwater cleanup and will be updated as needed throughout the proposed activities.)	4.12 – Hazardous and Nonhazardous Materials and Waste
Health BMP-1	<p>A Health and Safety Plan (HSP) would be developed for the proposed activities and implemented prior to the Proposed Action. It would include the following:</p> <ul style="list-style-type: none"> • General hazard controls • Monitoring requirements • Project-specific hazard controls, such as asbestos, lead-based paint, and earthmoving equipment • Traffic control • Physical hazard controls, such as noise and temperature extremes • Biological hazard controls <p>Designated areas for chemical storage and handling would be identified. The plan would be reviewed for the project activities and include procedures to mitigate potential hazards, measures that provide protection from physical hazards, measures that provide protection from chemical hazards that might be present at the site, decontamination procedures, and worker and health and safety monitoring criteria to be implemented during project activities, if needed. Per 29 <i>Code of Federal Regulations</i> Part 1910, Hazardous Waste Operations and Emergency Response Standard, safety training for site workers must be met in order to conduct cleanup or emergency response operations. In addition, associated worker safety training would occur before ground-disturbing activities begin. Work zones would be marked clearly with barricades or construction fencing to control unauthorized access to the areas. In addition, if dust or chemical monitoring is required during demolition, it would be implemented according to the site-specific HSP, which would list the proper action limits at which controls would be required. (A HSP has been completed for the groundwater cleanup and will be updated as needed throughout the proposed activities.)</p>	4.9 – Health and Safety 4.12 – Hazardous and Nonhazardous Materials and Waste

BMP or Mitigation Measure No.	BMP and Mitigation Measure Description	Affected Resources
Health BMP-3	A Hazardous Substance Control and Emergency Response Plan would be prepared to include project-specific hazard controls for dust, lead-based paint, asbestos, heavy metals, pesticides, petroleum products, polychlorinated biphenyls from transformers, other chemicals of concern, and spill containment procedures, in the unlikely event that chemicals should be found during pre-demolition activities. Required personal protective equipment and worker training and qualification would be included in the site-specific HSP. (A Hazardous Substance Control and Emergency Response Plan has been completed for the groundwater cleanup and will be updated as needed throughout the proposed activities.)	4.9 – Health and Safety

F. Decision

It is NASA's decision to proceed with groundwater remediation activities described in the Proposed Action section of the FEIS, based on the FEIS, input from agencies and the community, and groundwater fieldwork and cleanup technology feasibility studies. The various treatment options described will be applied individually and/or in combination to accomplish the remedial cleanup objectives. These objectives include preventing contaminant exposure to human and biological receptors, managing plume migration, and reducing contaminant sources. The specifics will be developed through detailed implementation plan(s) known as Corrective Measures Implementation (CMI). This plan(s) will describe the design, construction, operation, maintenance and monitoring of all actions to be implemented and will be developed once DTSC has completed its California Environmental Quality Act process.

NASA's decision is to proceed with the groundwater cleanup activities described in Section 2 of the FEIS and will move NASA forward toward complying with the state orders.



Daniel J. Tenney
Associate Administrator for Mission Support Directorate

10/9/18

Date

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Attachment
Programmatic Agreement Among the National
Aeronautics and Space Administration, the California
State Historic Preservation Officer, and the Advisory
Council on Historic Preservation Regarding Demolition
and Soil and Groundwater Cleanup at Santa Susana
Field Laboratory

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**PROGRAMMATIC AGREEMENT
AMONG
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA**

WHEREAS, This Programmatic Agreement (“PA”) is made among the National Aeronautics and Space Administration (“NASA”), the California State Historic Preservation Officer (“SHPO”), and the Advisory Council on Historic Preservation (“ACHP”) (referred collectively herein as the “Signatories” or individually as a “Signatory”), pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (“NHPA”), 16 United States Code (“U.S.C.”) § 470f and its implementing regulations, 36 Code of Federal Regulations (“CFR”) Part 800.

WHEREAS, NASA notified the SHPO, the ACHP, and the public that it would follow 36 CFR 800.8 and used the process and documentation required for the preparation of an Environmental Impact Statement (“EIS”) to comply with Section 106 in lieu of the procedures set forth in 36 CFR 800.3 through 800.6, and the National Environmental Policy Act (“NEPA”); and

WHEREAS, in accordance with the Administrative Order on Consent (“AOC”) (See Attachment 1) signed by NASA and the Department of Toxic Substances Control for the State of California on December 6, 2010, and the Consent Order for Corrective Action (“Consent Order”) signed by NASA in August 2007 (See Attachment 1), NASA plans to (a) remediate the environment at the NASA-administered portion of the Santa Susana Field Laboratory (“NASA SSFL” or “NASA Property”) which includes ongoing environmental testing, soil, and groundwater cleanup, and (b) to demolish the majority of extant structures (hereinafter defined as “Undertaking”) necessary to support remediation of the NASA property; and

WHEREAS, NASA is the agency responsible for the Undertaking, including demolition, cleanup actions, and mitigation measures and compliance with Section 106 of the NHPA and the implementing regulations with respect to the Undertaking; and

WHEREAS, the United States General Services Administration (“GSA”), is responsible for the disposition of the NASA SSFL and compliance with Section 106 of the NHPA for a conveyance outside of federal ownership; and

WHEREAS, GSA will conduct its own Section 106 process for the separate disposition undertaking; and

WHEREAS, the NASA SSFL is 451 acres located in Ventura County, California, within the Simi Hills, south of Simi Valley, west of West Hills, and north of Bell Canyon. NASA SSFL is part of a larger complex also known as the Santa Susana Field Laboratory the remainder of which is owned by The Boeing Company (“Boeing” and “Boeing SSFL” or “Boeing Property”), which owns a portion of Area I, and all of Areas III and IV, as well as buffer areas to the north and south of NASA’s Property. NASA SSFL comprises all of Area II and a portion of Area I (See Attachments 2

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

and 3). The Department of Energy (“DOE”) leases land in Area IV from Boeing. NASA SSFL includes multiple buildings and facilities that supported the testing of rocket engines from the 1950s until 2006, including laboratory buildings, offices, test stands, control houses, support facilities, and associated roads and utilities; and

WHEREAS, in consultation, NASA defined the Undertaking's Area of Potential Effects (“APE”) as the entirety of the NASA Property (Area I and Area II), which constitutes 451 acres, plus 39 acres within the Boeing Property that may require soil cleanup as a part of the Undertaking (Attachment 3, Area of Potential Effects); and

WHEREAS, in consultation with SHPO, on May 15, 2008, NASA determined that the NASA SSFL contains three (3) National Register of Historic Places (“NRHP” or “National Register”)-eligible historic districts: Alfa, Bravo, and Coca Test Area Historic Districts. Each historic district includes two test stands and a control house, all of which are also individually NRHP-eligible under Criteria A and C and Criteria Consideration G. These historic properties (“NASA Historic Properties”) are from the Cold War (Military) and Space Exploration period of significance, circa mid-1950s to 1991 (Attachment 4); and

WHEREAS, there are three (3) recorded archeological sites within the APE, which was surveyed by NASA and other entities to include “Burro Flats Site” (CA-VEN-1072), a “Rock Shelter” (CA-VEN-1800), and a “Sparse Lithic Scatter” (CA-VEN-1803). The Burro Flats Site (CA-VEN-1072) was listed in the NRHP and the California Register of Historic Resources in 1976. It has since been updated to include 16 separate loci. The Burro Flats Site (CA-VEN-1072) and Sparse Lithic Scatter (CA-VEN-1803) have the potential to be adversely affected by the Undertaking.

WHEREAS, NASA conducted a preliminary Traditional Cultural Property (“TCP”) investigation and, in consultation with the Santa Ynez Band of Chumash Indians (“SYBCI”), a federally-recognized Indian tribe, determined that a TCP exists within the APE that likely meets National Register Criterion A in addition to Criterion D for TCPs and has determined that these qualifying characteristics will be adversely affected by NASA’s Undertaking; and

WHEREAS, the locations of the archeological sites noted above and the TCP are sensitive information and must remain confidential; and

WHEREAS, the SYBCI has designated the NASA Property part of a larger Indian Sacred Site under Executive Order 13007 and has been invited by NASA to sign this PA as an invited signatory (“Invited Signatory”); and

WHEREAS, the DTSC, having a major role as the regulator responsible for many requirements associated with the AOC and this PA has been invited to sign this PA as an invited signatory (“Invited Signatory”) and declined to sign; and

WHEREAS, NASA published an Integrated Cultural Resources Management Plan (“ICRMP”) for the NASA Property (See Attachment 1); and

WHEREAS, in consultation with the SHPO, the SYBCI, and the Consulting Parties (hereinafter defined), NASA determined that the Undertaking will have an adverse effect on Historic Properties; and

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

WHEREAS, in accordance with 36 CFR 800.6(a)(1), NASA has notified the ACHP of its adverse effect determination providing the specified documentation, and the ACHP has chosen to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

WHEREAS, NASA also contacted by letter and telephone multiple non-federally recognized tribes within California (See Attachment 5 for a list of Tribes NASA notified), that were identified by the California Native American Heritage Commission (“State-Listed Tribes”), and invited them to participate in consultation on the Undertaking, and some members of these tribes elected to participate as “Consulting Parties”, while others State-Listed Tribes did not respond; and

WHEREAS, NASA has consulted with over thirty (30) Section 106 Consulting Parties in accordance with Section 106 of the NHPA, and its implementing regulations (36 CFR 800.6(b)(2)) to resolve the adverse effects of the Undertaking on historic properties (See Attachment 6 for a list of Consulting Parties); and

WHEREAS, NASA also provided for public involvement in accordance with 36 CFR 800.8(a)(1) by coordinating Section 106 review with public review and consultation via an EIS for the Undertaking under provisions of NEPA, 42 U.S.C. §4321 et. seq.; and

WHEREAS, together with the Signatories and the Invited Signatories, NASA consulted with the Consulting Parties, to resolve the adverse effects of the Undertaking on historic properties; and

NOW, THEREFORE, the Signatories agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

NASA shall ensure that the following measures are carried out by or under the direct supervision of a person or persons who meet(s) or exceed(s) the pertinent qualifications in the Secretary of the Interior’s Professional Qualification Standards (http://www.nps.gov/history/local-law/arch_stnds_9.htm) in those areas in which the qualifications are applicable for the specific work performed.

I. TEST STANDS AND ASSOCIATED SUPPORT FACILITIES

A. Demolition Actions

1. Immediate Demolition. Upon completion of the EIS, NASA will demolish all non-historic properties, including all non-contributing historic structures within the NASA SSFL historic districts, and NASA will demolish the entirety of the Coca Test Stand Historic District (See Attachments 3 and 4)
2. Items for Display. Prior to demolition of any test stands, NASA will consult with NASA’s artifacts officer and the Signatories and Invited Signatories in accordance with the Consultation and Review Stipulation (Stipulation V) to identify several

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

special or representative pieces of the test stands for display in local museums or through the NASA artifacts module at <http://gsaccess.gov/nasawel.htm>.

3. Monitoring. NASA's archeologist in consultation with SYBCI will identify locations where demolition activities may require monitoring by Native American and archeological monitors. NASA will use Native American and archeological monitors, as appropriate, to oversee ground disturbing work in areas of archeological concern. Their goal will be to minimize impacts to cultural materials, artifacts and intact site deposits and to assure proper protection of any encountered during the Undertaking.

B. Retention of Historic Test Stands and Facilities

1. Retention. NASA will retain and preserve one of the remaining test stands and control house and possibly other contributing elements within the related historic district (Alfa or Bravo).
2. Consultation. NASA will consult with SYBCI, the State of California Department of Toxic Substances Control ("DTSC"), and SHPO to choose which test stand and control house and contributing elements will remain based on the following criteria:
 - a. Meeting the 2010 AOC conditions; and
 - b. Abatement, operations, and maintenance costs; and
 - c. NASA, SYBCI, or SHPO provides input that identifies concerns related to impacts to the TCP or any newly identified cultural deposits,
3. Hazardous Materials Identification. Within one (1) year of the execution of this PA, NASA will conduct a cost estimate for the abatement (including full abatement and/or encapsulation) for the Alfa and Bravo historic districts.
4. Retained Property Identification. NASA will identify one test stand and associated control house at a minimum and other contributing historic properties if feasible to preserve/retain based on information developed for Stipulation I.B.2. NASA will notify the Consulting Parties which facilities will be retained. The other historic district will be demolished upon completion of the selection process.
5. Proviso: If NASA's efforts fail to retain a test stand and control house identified in Stipulation I.B.4 due to constraints posed by execution of the AOC or reasons outside of NASA's control, such as (but not limited to) fiscal or legislative, NASA will retain several representative pieces of demolished test stands for display in local museums or through the NASA artifacts module at <http://gsaccess.gov/nasawel.htm>.
6. Fencing. Upon completion of soil cleanup and demolition activities, based on consultation with the SHPO, NASA will provide and maintain a fenced enclosure around any test stand(s) not demolished until the property is transferred.

C. Mitigation Measures for Demolition

1. Structural Documentation. Within six (6) months of the execution of this PA, NASA will engage the National Park Service ("NPS") to complete Historic American Engineering Record ("HAER") Level I documentation of all test stands in Alfa,

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

Bravo, and Coca Test Area Historic Districts and will complete HAER Level II documentation for control houses within each district, and HAER Level III for all remaining contributing structures to the Alfa, Bravo, and Coca Test Area Historic Districts and submit the documentation to the Library of Congress (“LOC”) for archiving.

2. Photography and Narrative. NASA will post on the NASA website within two (2) years of the signing of this PA a collection of historic photos and the historic narrative from existing surveys of NASA SSFL, and will provide the same in an appropriate format that will be available on written request to NASA for five (5) years for interpretive displays at museums, schools, other organizations, or a potential interpretive center. Photos and narrative related to HAER documentation will be included in archival material submitted to the LOC.
3. National Register Determination of Eligibility. NASA will update the National Register Determination of Eligibility for the retained test stand and control house and any other facilities retained in accordance with Stipulations I.B.1 through I.B.4 upon completion of all demolition activities within twelve (12) months of finalization of the decision to retain the structures.
4. Video Documentation. Within twenty-four (24) months of the execution of the PA, NASA will produce a video documenting the history of the construction and use of NASA’s SSFL test stands; the video will be posted on NASA’s website for three (3) years minimum and available on CD by request for up to three (3) years after posting on the website. The video will include a virtual model or “fly-through” of the test stands.
5. Oral Histories. Within twenty-four (24) months of the execution of the PA, NASA will conduct twelve (12) oral history interviews of personnel who formerly worked at NASA SSFL and will include the transcripts on NASA’s oral history website http://www.jsc.nasa.gov/history/nasa_history.htm with links to other NASA websites, including SSFL.

II. TREATMENT OF TRADITIONAL CULTURAL PROPERTY

- A. Native American Advisory Board. Within six (6) months of execution of this PA, NASA will establish a Native American Advisory Board (“NAAB”) comprising volunteer representatives from federally recognized Indian tribes and State-Listed Tribes with an interest in the protection of Native American sites on NASA SSFL to advise NASA on matters relating to historic properties of interest to Native Americans on NASA SSFL. The NAAB will provide expertise on and input to the development of the ethnographic history described below in Stipulation II.B and in the identification of any ongoing issues related to the management and protection of Native American sites, including the TCP. The NAAB will remain in effect for the duration of this PA, unless the NAAB and NASA agree that the advisory board is no longer needed.
- B. Ethnographic History. Within thirty-six (36) months of execution of this PA, NASA will conduct an ethnographic history (adding to and synthesizing the analyses from the TCP Survey and previous related ethnographic studies). The ethnographic history will include

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

in-depth research of archeological investigations in the area, interviews, and other research methods based on consultation with the NAAB and local experts to provide a greater understanding of the historic use and associations of the Burro Flats area and SSFL. A public version of the ethnographic history will be published on NASA's website for a minimum of five (5) years, with digital copies available upon request. Copies of the ethnographic history will be provided to all Signatories.

- C. TCP Nomination. In consultation with SHPO, Boeing, DOE, NAAB, SBYCI, and NPS, NASA will produce and submit a NRHP nomination of the TCP to the California State Historic Resources Commission and the NRHP for the TCP within eighteen (18) months of the completion of the ethnographic history.
- D. Access. In accordance with Executive Order 13007, Indian Sacred Sites, NASA will continue to provide access to ceremonial sites for Native Americans. Written requests for access will be processed by NASA until the land is transferred to the next owner. NASA will endeavor to provide such access to Native Americans for ceremonies unless there is safety or health risks associated with the demolition and cleanup activities or concerns regarding the protection or preservation of the site due to weather conditions, fire hazard, or other hazards.
- E. Reseeding. NASA will backfill a portion of the removed soil and reseed areas affected by cleanup and demolition activities using a native seed mix similar to the seed mix being used on the adjacent Boeing property to encourage plant regrowth in the TCP.

III. BURRO FLATS SITE (CA-VEN-1072)

- A. Boundary Determination and National Register Nomination. Prior to any cleanup excavation activities on the NASA Property, NASA will consult with SHPO to identify a testing plan to conduct further archeological investigations within NASA's boundary to confirm the extent of the boundary ("Burro Flats Site Boundary") on NASA land and, within twelve (12) months of publishing the final report, in consultation with the SYBCI and Boeing (or its consultants), develop an updated National Register nomination form to be submitted to the SHPO and NRHP.
- B. Monitoring. NASA will use archeological and Native American monitors to oversee field sampling, vegetation clearing, and ground disturbing activities within Burro Flats Site and the buffer area defined by NASA in 2008 for management purposes, as well as within any other known archeological sites, and will coordinate, where feasible, any sampling within Burro Flats Site Boundary with the boundary determination work.
- C. Environmentally Sensitive Areas Action Plan. NASA will develop an Environmentally Sensitive Areas Action Plan ("ESAAP") that will be submitted for review in accordance Stipulation V to SHPO and SYBCI for use by NASA and its contractors for sensitive cultural areas such as archeological sites to provide active protection during the undertaking to prevent inadvertent damage. The ESAAP will be developed by qualified archeologists and will delineate areas to be protected, document protective measures required, identify responsible parties and their appropriate tasks, and outline an anticipated schedule and process. The ESAAP will be developed in coordination with the Implementation Plan required by the AOC to ensure coordination of the cleanup

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

- activities. The ESAAP will provide provisions for conducting the Undertaking within an archeological site, which will be protective of those areas of the site that are not planned to be affected by the Undertaking.
- D. AOC Exception Consideration. Prior to commencing the soil cleanup activities in and around Burro Flats, NASA will submit to DTSC the revised Burro Flats Site Boundary that lies within NASA's APE and request that any cleanup required to meet DTSC standards identified in the AOC within the Burro Flats Site Boundary be considered part of the "Native American Artifacts" exceptions clause identified in the Agreement In Principle of the AOC and be exempted from the cleanup requirement.
- E. Exemption Override. If DTSC determines that there is an unacceptable health risk that requires environmental cleanup within the Burro Flats Site Boundary, even in view of an exception otherwise available, NASA and DTSC will identify which areas will require cleanup to meet the prescribed health risk identified by DTSC. NASA will determine the most effective cleanup methodology to achieve the goals while being as sensitive as possible to the site, and promptly inform the SYBCI and SHPO of their determination in writing.
- F. Data Recovery Consideration. If the cleanup requires excavation within the Burro Flats Site Boundary, NASA will promptly notify the NAAB, SHPO, and SYBCI that it intends to develop a Research Design for a Phase III data recovery plan in accordance with the Consultation and Review Stipulation (Stipulation V).
1. NASA will consult with the NAAB, SHPO, and SYBCI to develop a Research Design for a Phase III data recovery plan, which will include a provision for Native American monitors. The submission package will be submitted by NASA to SYBCI and SHPO in accordance with the Consultation and Review Stipulation (Stipulation V). NASA will proceed with the Phase III data recovery plan prior to proceeding with cleanup within the archeological site boundaries.
 2. If the SHPO and/or SYBCI requests, in writing within 30 days of notification, that NASA refrain from conducting data recovery, as described in III.F, within or around the Burro Flats Site Boundary, NASA will work with SYBCI and SHPO to identify an alternative mitigation. Alternative mitigation will be agreed to in a request for concurrence letter sent from NASA and concurred by SYBCI and SHPO prior to commencement of cleanup activities within the Burro Flats Site Boundary.
- G. Documentation and Curation. NASA shall ensure that all records resulting from excavation of any National Register-eligible archeological site(s) are curated by an institution meeting the standards set forth in 36 CFR 79, and that all artifacts and other material resulting from the same excavation are maintained in accordance with 36 CFR 79 and curated with previous federal collections associated with SSFL within the State of California.
- H. Protection. NASA will update its Standard Operating Procedures ("SOP") for Archeological Resource Protection Act Compliance Review and Preventing Vandalism to Archeological Sites within NASA's ICRMP to include protection during demolition and

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

cleanup activities, and the update will be submitted by NASA to SYBCI and SHPO in accordance with the Consultation and Review Stipulation (Stipulation V).

IV TREATMENT OF OTHER ARCHEOLOGICAL PROPERTIES

In order for NASA to conduct environmental remediation and demolition activities, NASA will ensure the following stipulations are implemented:

- A. **Field Sampling.** NASA will provide archeological and Native American monitors for field sampling conducted to identify soil contaminants within NASA SSFL.
- B. **Further Archeological Investigation.** Within six (6) months of the completion of the final environmental field sampling or testing, NASA will commence Extended Phase I archeological investigations in those footprints of cleanup areas where NASA plans to excavate soil to achieve cleanup goals. Where necessary, to allow archeological investigation beneath building footprints, some archeological investigations may be delayed. These investigations will include Native American monitors. All archeological investigations will be completed prior to conducting ground disturbing activities (other than minor disturbance in and around structures being demolished.)
- C. **Archeological Site Discovery and Evaluation.** Any newly identified archeological sites within the Extended Phase I investigations will be evaluated by NASA in accordance with 36 CFR 63 and bulletins, guidance, and documents produced by the NPS, in consultation with NAAB, SHPO, and SYBCI, to determine if they are historic properties. NASA will submit the report for review in accordance with the Consultation and Review Stipulation (Stipulation V).
- D. **In the event the final cleanup footprint includes a portion of the Sparse Lithic Scatter (CA-VEN-1803) or an archeological site is found meeting the National Register eligibility criteria within the final footprint of other cleanup areas, or NASA determines the site eligible for the NRHP for the purposes of this Undertaking, NASA will consult with DTSC and request that the site be considered part of the "Native American Artifacts" exceptions clauses identified in the AIP of the AOC and be exempted from the cleanup requirement.**
 1. If the DTSC decides that the AOC Exception Consideration does not apply and NASA is required to conduct cleanup that will adversely affect the archeological site, NASA will proceed in the same manner as Stipulations III.D through III.G.
- E. **ICRMP Updates.** NASA will update its ICRMP to include the National Register-eligible site(s), should they exist, and to include in the ICRMP protection measures during demolition and cleanup per Stipulation III.H. The updated ICRMP will be submitted by NASA to SYBCI and SHPO in accordance with the Consultation and Review Stipulation (Stipulation V).
- F. **Protection Measures.** If active protection measures are needed such as fencing to protect a newly found site during demolition and/or cleanup activities, and NASA's Qualified Personnel determine that certain protection measures can be installed without adverse effects to the National Register-eligible archeological site(s), then NASA will proceed with installation using Native American and archeological monitors. Such protection

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

activities will be summarized by NASA in writing, and submitted to SHPO, SYBCI, and the NAAB, for their information, prior to installation.

1. If NASA determines the protection measure is likely to cause an adverse effect, NASA will consult with SHPO, SYBCI, and the NAAB to identify ways to avoid, minimize, or mitigate the effects prior to installation.

G. Training Module. NASA will develop a training module within six (6) months of the signing of this PA for all demolition and cleanup personnel, including new personnel coming on site to perform cleanup activities throughout the life of the project, who will be working at NASA SSFL for the protection of cultural resources that includes the procedures identified in NASA's ICRMP for inadvertent discoveries and human remains.

V. CONSULTATION AND REVIEW

A. NASA will consult with SHPO, DTSC, SYBCI, and the NAAB as required by the stipulations within this PA.

1. NASA will submit reports and requests to SHPO and SYBCI for review. Respondents will have thirty (30) calendar days to review submissions, after which NASA will respond, in writing, to written comments within thirty (30) calendar days and provide a (15) day final review opportunity for written comments.
2. In the event of disagreement by SHPO, SYBCI, or NAAB with NASA or each other regarding the stipulations contained within the PA, the matter will be addressed in accordance with the Dispute Resolution Stipulation (Stipulation IX).
3. In the event of disagreement between NASA and DTSC regarding issues related to this PA, the matter will be referred to the dispute process outline in the 2010 AOC or 2007 Consent Order, as appropriate and NASA will inform SHPO, SYBCI, or NAAB of the outcome as reasonably practical.

VI. DURATION

This PA will expire in six (6) years from the date of its execution or when stipulations are complete. Prior to such time, NASA may consult with the other Signatories and Invited Signatories to reconsider the terms of the PA and amend it in accordance with the Amendments Stipulation (Stipulation XI).

VII. UNANTICIPATED DISCOVERIES

- A. In the event management, demolition, or cleanup activities uncover any unanticipated discoveries, NASA will proceed in accordance with the procedures outlined in Attachment 7. All work within 30 meters of the location will be suspended and the procedures outlined in Attachments 7 and 8 will be followed.
- B. In the event of the discovery of human remains and/or cultural items (funerary objects, sacred objects, objects of cultural patrimony) which are subject to the Native American Graves Protection and Repatriation Act ("NAGPRA") (25 U.S.C. § 3001-3013, 18 U.S.C. § 1170) and the Archeological Resources Protection Act ("ARPA") (16 U.S.C. § 470aa-470mm); NASA will implement Attachment 8 regarding the Treatment of Human

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

Remains and Funerary/Sacred Objects until such time as a Plan of Action is developed in accordance with NAGPRA. The plan shall include provisions for in-place preservation, excavation, and analysis, in accordance with a data recovery plan (identified in Stipulation III.G-H), and disposition of the remains, as appropriate. In development of the Plan NASA will, in good faith, consult with the relevant parties such as the NAAB and SYBCI in accordance with applicable law. The Plan of Action will supersede Attachment 8 upon completion. If the remains are determined to be non-native, NASA shall follow the procedures outlined in the applicable California unmarked burial law.

VIII. ANNUAL REPORTING

Each year, following the execution of this PA until it expires or is terminated, upon completion of the cleanup, NASA shall provide all parties to this PA a summary report detailing work carried out pursuant to its terms. Such report shall include any proposed scheduling changes, any problems encountered, and any disputes and objections received in NASA's efforts to carry out the terms of this PA.

IX. DISPUTE RESOLUTION

Should any Signatory or Invited Signatory to this PA object at any time to any actions proposed or the manner in which the terms of this PA are implemented, NASA shall consult with such party to resolve the objection. If NASA determines that such objection cannot be resolved, NASA will:

- A. Forward all documentation relevant to the dispute, including NASA's proposed resolution, to the ACHP. The ACHP shall provide NASA with its comments on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, NASA shall prepare a written response that takes into account any comments regarding the dispute from the ACHP, Signatories and Invited Signatories, and provide them with a copy of this written response. NASA will then proceed according to its final decision.
- B. If the ACHP does not provide comments regarding the dispute within the thirty (30)-day period, NASA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, NASA shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and Invited Signatories, to the PA, and provide them and the ACHP with a copy of such written response.
- C. NASA's responsibilities to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

X. ANTI-DEFICIENCY

NASA's obligations under this PA are subject to the availability of appropriated funds, and the stipulations of this PA are subject to the provisions of the Anti-Deficiency Act. NASA will make reasonable and good faith efforts to secure the necessary funds to implement this PA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs NASA's ability to implement the stipulations of this PA, NASA will consult in accordance with the Amendments Stipulation (Stipulation XI) or Termination Stipulation (Stipulation XII) of this PA.

XI. AMENDMENTS

This PA may be amended when such an amendment is agreed to in writing by all Signatories of the PA. The amendment will be effective on the date a copy signed by all of the Signatories and Invited Signatories is filed with the ACHP.

XII. TERMINATION

- A. If any Signatory or an Invited Signatory that signed this PA determines that the terms of the PA will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XI, above. If within thirty (30) days (or another time period agreed to by all Signatories and Invited Signatories that signs the PA) an amendment cannot be reached, any Signatory and/or an Invited Signatory that signed this PA may terminate the PA upon written notification to the other Signatories and Invited Signatories.
- B. In the event of termination of this PA, NASA shall comply with the provisions of 36 CFR Part 800 for all portions of the Undertaking that have not already begun. For any new undertakings or changes in the Undertaking, NASA must either (a) execute a PA pursuant to 36 CFR 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. NASA shall notify the Signatories and Invited Signatories that signed the PA, to the course of action it will pursue.

XIII. CONFIDENTIALITY

All parties to this PA acknowledge that information about historic properties, prospective historic properties, or properties considered historic for purposes of this PA are or may be subject to the provisions of Section 304 of NHPA and Section 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of sensitive information, and having so acknowledged, will ensure that all actions and documentation prescribed by this PA are, where necessary, consistent with the requirements of Section 304 of the NHPA and Section 6254.10 of the California Government Code.

EXECUTION of this PA by NASA, ACHP, and SHPO and implementation of its terms evidence that NASA has taken into account the effects of this Undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

NASA:



Patrick E. Scheuermann
Director

Date: 4/2/14

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT SSFI, VENTURA COUNTY, CA

California State Historic Preservation Officer:



Carol Rowland-Nawi

Date: 4-10-14

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

Advisory Council on Historic Preservation:



John Fowler
Director



Date: 9/17/14

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

INVITED SIGNATORY:

Santa Ynez Band of Chumash Indians



Vincent Armenta, Chairman

Date:

4/23/14

ATTACHMENT 1

Resources

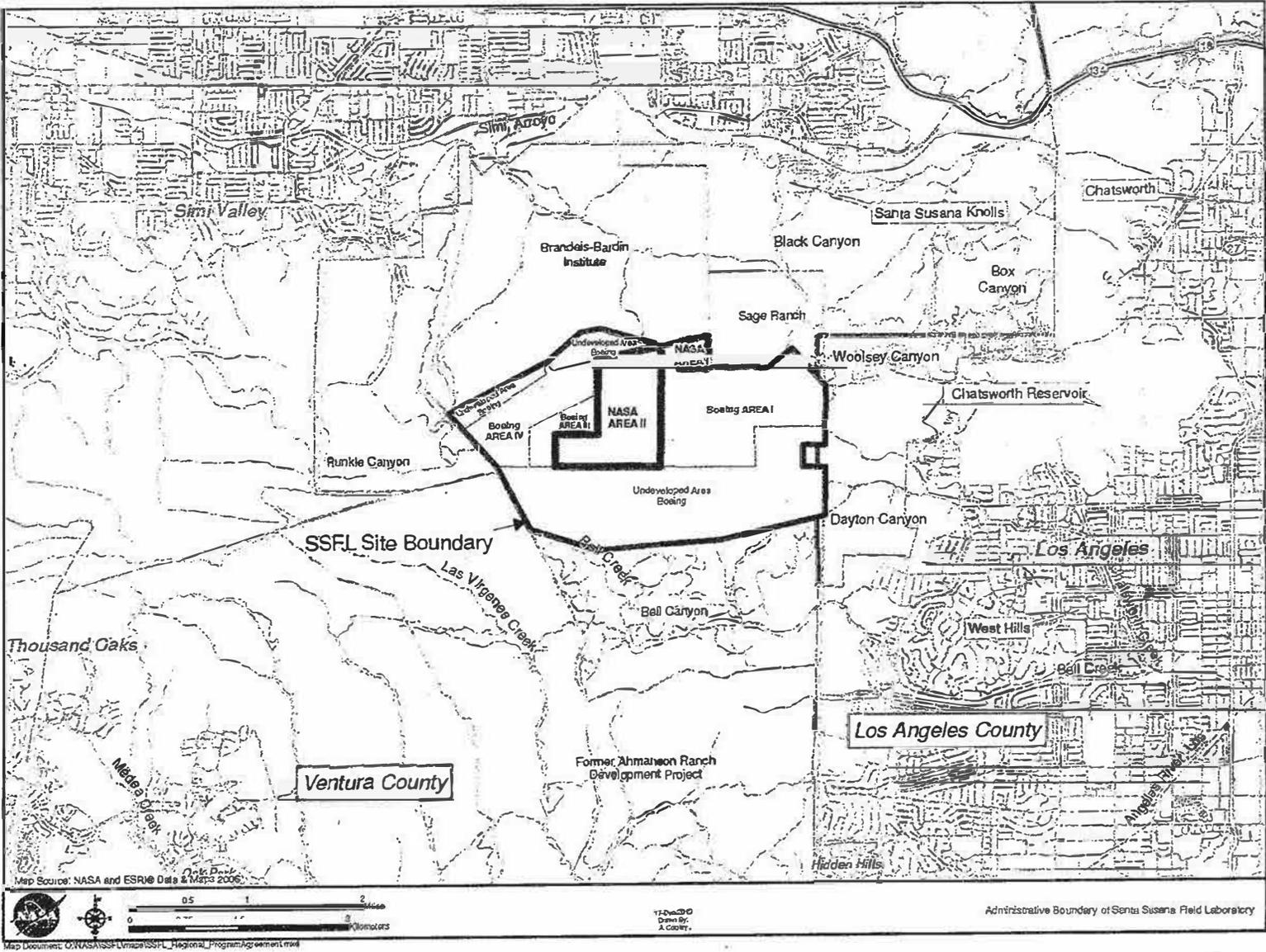
Administrative Order on Consent, ("AOC") signed by NASA and the Department of Toxic Substances Control for the State of California on December 6, 2010. Copy is available at http://ssfl.msfc.nasa.gov/documents/governance/NASA_DTSC_Final_AOC_Dec_2010.pdf or upon request at SSFL Program Director, NASA MSFC AS01, Building 4494, Huntsville, AL 35812.

Consent Order for Corrective Action ("Consent Order") signed by NASA in August 2007. Copy is available at http://www.dtsc.ca.gov/SiteCleanup/Projects/upload/SSFL_COCA.pdf or upon request at SSFL Program Director, NASA MSFC AS01, Building 4494, Huntsville, AL 35812.

Integrated Cultural Resources Management Plan for Santa Susana Field Laboratory, Ventura County, California, January 2009-2013. Copy is available at http://ssfl.msfc.nasa.gov/documents/factsheets/ICRMP_SSFL_2009-2013.pdf or upon request at SSFL Program Director, NASA MSFC AS01, Building 4494, Huntsville, AL 35812.

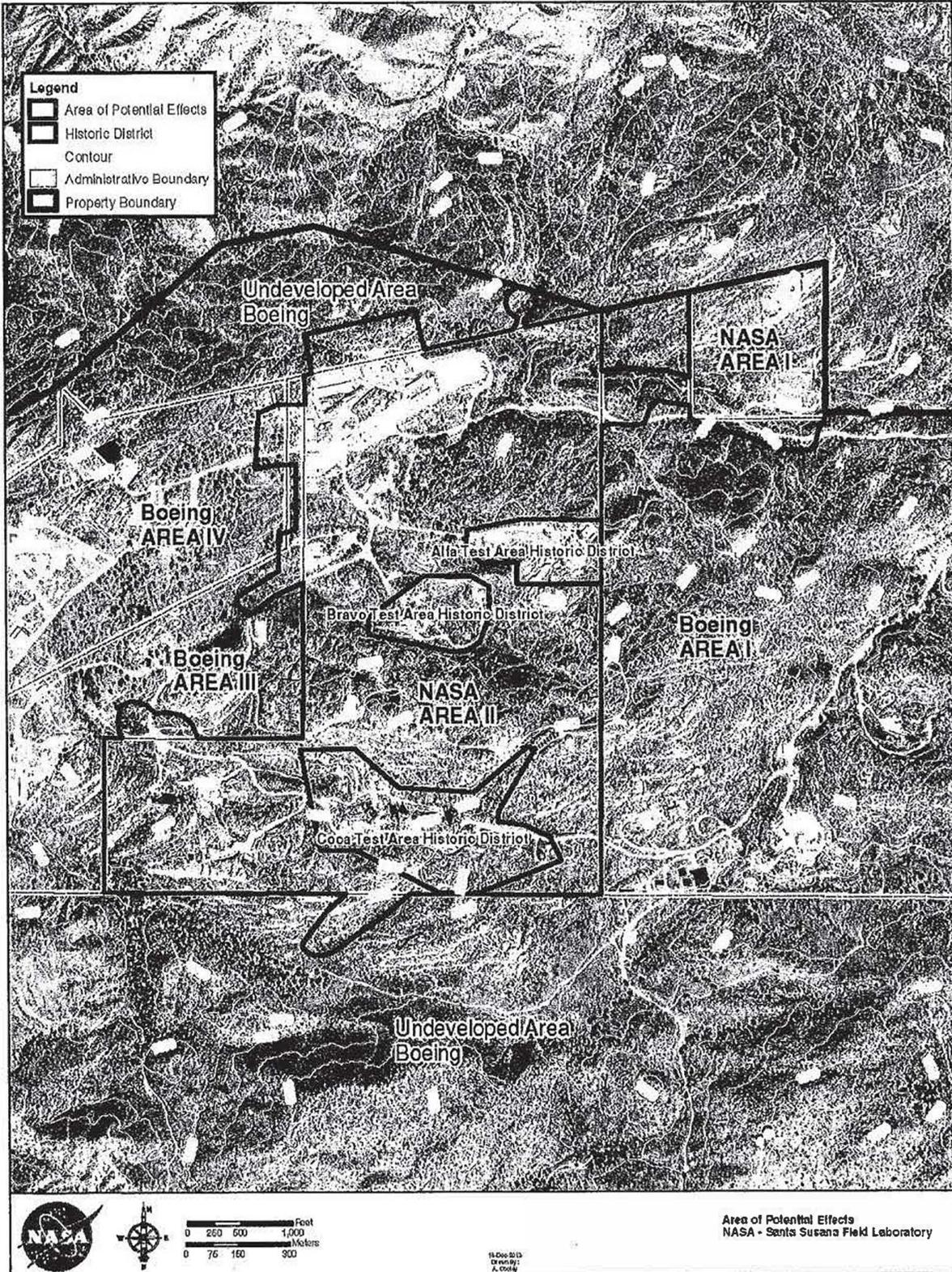
PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 2
Administrative Boundary of Santa Susana Field Laboratory



PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 3
Area of Potential Effects Map



PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 4

Historic Structures and Districts in the NASA-administered Areas at Santa Susana Field Laboratory

Structure No.	Structure Name	NRHP Status	
		Individually Eligible	Contributes to a Historic District
Alfa Test Area Historic District			
2208	Alfa Control House	X	X
2209	Alfa Terminal House		X
2727	Alfa I Test Stand	X	X
2727A	Alfa I Electrical Control Station		X
2729	Alfa III Test Stand	X	X
2729A	Alfa III Electrical Control Station		X
2739	Standtalker Shack		X
2X	Alfa Observation Structure (Pill Box)		X
2Y	Alfa Observation Structure (Pill Box)		X
	Alfa Landscape/Spillway		X
Bravo Test Area Historic District			
2213	Bravo Control House	X	X
2214	Bravo Terminal House		X
2730	Bravo I Test Stand	X	X
2730A	Bravo I Electrical Control Station		X
2731	Bravo II Test Stand	X	X
2731A	Bravo II Electrical Control Station		X
2Z	Bravo Observation Structure (Pill Box)		X
	Bravo Landscape/Spillway		X
Coca Test Area Historic District			
2218	Coca Control Center	X	X
2222	Coca Pre-Test Building		X

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 4

Historic Structures and Districts in the NASA-administered Areas at Santa Susana Field Laboratory

Structure No.	Structure Name	NRHP Status	
		Individually Eligible	Contributes to a Historic District
2235	Coca Electrical Control Station (LOX)		X
2236	Coca Electrical Control Station (LH2)		X
2237	Coca GH2 Compressor Building		X
2239	Coca GH2 Compressor Building		X
2241	Coca Pump House		X
2520	Coca High Pressure GH2 and GN2 Vault		X
2614	Coca IV Observation Structure (Pill Box)		X
2733	Coca I Test Stand	X	X
2787	Coca IV Test Stand	X	X
2A	Coca North Observation Structure (Pill Box)		X
2B	Coca Observation Structure (Pill Box)		X
V99	Coca GH2 Vessel		X
V100	Coca LH2 Vessel #1		X
V108	Coca LOX Vessel #1		X
	Coca Cable Tunnel		X
	Coca Landscape/Spillway		X

Notes:

GH2 = gaseous hydrogen

GN2 = gaseous nitrogen

LH2 = liquid hydrogen

LOX = liquid oxygen

NRHP = National Register of Historic Places

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 5

List of Non-federally Recognized Tribes Contacted by NASA

Name	Affiliation
Charles Cooke	Chumash, Fernandefio, Tataviam, Kitanemuk
Beverly Salazar Folkes	Chumash, Tataviam, Fernandefio
James Ramos, Chairperson	Serrano
Ronnie Salas, Cultural Preservation Department	Fernandefio, Tataviam
Julie Lynn Tumamait	Barbareno/Venturefio Band of Mission Indians, Chumash
Patrick Tumamait	Chumash
Chief Mark Steven Vigil, San Luis Obispo County Chumash Council	Chumash
Owl Clan, Qun-tan Shup	Chumash
John Valenzuela, Chairperson San Fernando Band of Mission Indians	Fernandefio, Tataviam, Serrano, Vanyume, Kitanemuk
Randy Guzman - Folkes	Chumash, Fernandefio, Tataviam, Shoshone Paiute, Yaqui
Vennise Miller, Chairperson Coastal Band of the Chumash Nation	Chumash
Carol A. Pulido	Chumash
Melissa M. Parra-Hernandez	Chumash
Frank Arredondo	Chumash
Freddie Romero, Santa Ynez Band of Chumash Indians	Chumash

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 6
List of Consulting Parties

Consulting Party	Affiliation
Mark Beason	California Office of Historic Preservation
Carla Bollinger	Santa Susana Mountain Park Association
Bill Bowling	Aerospace Contamination Museum of Education
Gary Brown	National Park Service
Harry Butowsky	private contractor
Michael Collins	Self; EnviroReporter.com
Nicole Doner	Ventura County Cultural Heritage Board
Wayne Fishback	Self, neighboring property owners
Beverly Folkes	Self
Elizabeth Harris	Self; Research Psychologist on Government-Funded Public Health Contracts
Luhui Isha	Self
Nancy Kidd	Simi Valley Historical Society
Christian Kiillkkaa	Self
Al Knight	Self
Dan Larson	Compass Rose Archaeological
John Luker	Santa Susana Mountain Park Association
Tom McCulloch	Advisory Council on Historic Preservation
Mark Osokow	San Fernando Valley Audubon Society
Carol Rowland-Nawi	California State Historic Preservation Officer
Gwen Romani	Compass Rose Archaeological
John Tommy Rosas	Tongva Ancestral Territorial Tribal Nation
Bruce Rowe	Self
Chris Rowe	Self
Alan Salazar	Self
Margie Steigerwald	National Park Service
Clark Stevens	Resource Conservation District of the Santa Monica Mountains
Susan Stratton	California Office of Historic Preservation
Brian Sujata	SSFL Community Advisory Group
George Toren	Compass Rose Archaeological
Barbara Tejada	Self, Ventura County Archeological Society
Mati Waiya	Self

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND
SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

ATTACHMENT 6

List of Consulting Parties

Consulting Party	Affiliation
Christina Walsh	Cleanuprocketdyne.org
Abraham Weitzberg	Self
Mary Wiesbrock	Save Open Space
Ronald Ziman	Self
Tribes	
Vincent Armenta	Santa Ynez Band of Chumash Indians, Tribal Chairman
Sam Cohen	Santa Ynez Band of Chumash Indians
Freddie Romero	Santa Ynez Band of Chumash Indians, Elders Council
SSFL Participating Agencies	
James Biederman	General Services Administration
Jane Lehman	General Services Administration
Maureen Sheehan	General Services Administration
Other Agencies	
Paul Carpenter	Department of Toxic Substances Control
Richard Hume	Department of Toxic Substances Control
Ray Leclerc	Department of Toxic Substances Control
Mark Malinowski	Department of Toxic Substances Control

Note: Listing as a Consulting Party does not necessarily indicate agreement with the stipulations codified in this document.

ATTACHMENT 7

Inadvertent Discovery Plan

AMMENDED Excerpt from the Integrated Cultural Resources Management Plan for Santa Susana Field Laboratory, Ventura County, California

SOP 3: Responding to Inadvertent Discovery of Archeological Deposits

Regardless of whether an archeological inventory has been completed and regardless of whether a planned undertaking has been assessed for its effect on known historic properties, every undertaking that disturbs the ground surface has the potential to discover buried and previously unknown archeological deposits. This SOP outlines the policies and procedures to be followed in such cases.

Applicable Laws/Regulations/Procedural Requirements:

National Historic Preservation Act
National Environmental Policy Act
Archeological and Historic Preservation Act
Archeological Resource Protection Act
Native American Graves Protection and Repatriation Act
NASA Procedural Requirements 8580.1

Policy

Archeological deposits that are newly discovered during any undertaking shall be evaluated for their NRHP eligibility. Until NASA has determined an archeological site is ineligible, all known sites will be treated as potentially eligible and will be avoided insofar as possible. In the event that an archeological deposit is inadvertently discovered, work must cease within a 30 meter radius, the Cultural Resources Manager ("CRM") and the SHPO must be notified within two working days (e.g., letter or email notification), and a professional archeologist (meeting the Secretary of Interior's Professional Qualifications), must be consulted.

If the professional archeologist recommends that the archeological deposit is potentially eligible, the CRM will consult with the CA SHPO and federally recognized Native American tribes on the need for further testing and/or data recovery for those sites eligible under only Criterion D. If the undertakings may affect properties having historic value to any federally recognized Indian tribes with which NASA consults, the CRM will consult with the tribes and give them an opportunity to participate as interested persons during the consultation process. In the event that human remains are inadvertently discovered, work must cease in the area of the discovery and the CRM must be notified. If remains are determined to be Native American, federally recognized American Indian tribes will be notified.

Procedure.

- I. Workers will notify the CRM immediately upon the discovery of possible archeological deposits. (Standard language will be placed in contracts requiring contractors to notify the CRM immediately upon discovery of possible archeological deposits.)

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

When notified of the possible discovery of unexpected buried archeological material, the CRM will arrange to have a professional archeologist evaluate the site. Work will cease and the site will be protected pending the results of the evaluation.

- A. If fossils, natural stones, concretions, or other such items that are sometimes mistaken for archeological materials are recovered, then the CRM may allow the excavation to proceed without further action.
- B. If disturbances to the deposit have been slight and that portion of the Undertaking can be relocated to avoid the buried site, the CRM shall have the site recorded and forms submitted to the appropriate California Historical Resources Information System (CHRIS) in a routine manner, having avoided adverse impact through relocation of the proposed undertaking.
- C. If the location of that portion of the Undertaking cannot be changed, the CRM shall contact the CA SHPO by telephone or email within forty-eight (48) hours, report the discovery and initiate emergency consultation.
 1. If the deposits are evaluated as ineligible for inclusion on the NRHP by a professional archeologist in consultation with the CA SHPO, then NASA will prepare a memorandum for record, to be included in the site record. NASA may allow the excavations to proceed and shall advise the excavation foreperson(s) of the possibility and nature of additional discoveries that would require immediate notification of the CRM.
 2. If, in the opinion of the professional archeologist, the existing information is deemed insufficient to make a determination of eligibility, then an emergency-testing plan will be developed by NASA in coordination with the CA SHPO and SYBCI. Further excavation in the vicinity of the site will be suspended until an agreed testing procedure has been carried out and sufficient data has been gathered to allow a determination of eligibility.
 - a) If the CA SHPO and SSFL CRM agree after testing that the site is ineligible for inclusion to the NRHP, then work on the that portion of the Undertaking may resume.
 - b) If the site appears to be eligible for inclusion on the NRHP, or if NASA and the CA SHPO cannot agree on the question of eligibility, then NASA shall implement the following alternative actions, depending on the urgency of the action being delayed by the discovery of cultural material.
 - 1) NASA may relocate that portion of the Undertaking to avoid adverse effect.

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

- 2) NASA may request that the site be exempted from cleanup activities if applicable to DTSC as a Native American Artifact in accordance with the AIP.
- 3) NASA may seek the opinion of the Keeper of the NRHP
- 4) -NASA may proceed with a Research Design and data recovery plan in accordance with Stipulation III.F-G
- 5) NASA may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of the CA SHPO, federally recognized tribes, and the ACHP. Interim comments must be provided to NASA within 48 hours and formal comments within 30 days.

- II. If examination by a professional osteologist indicates the materials are of human origin, an archeologist must make a field evaluation of the primary context of the deposit and its probable age and significance, record the findings in writing, and document the materials.
- A. If at any time human remains, funerary objects, or Native American sacred objects are discovered, the CRM will ensure that the provisions of NAGPRA, ARPA and/or AIRFA are implemented.
 - B. The CRM will begin consultation with federally-recognized tribes.

ATTACHMENT 8

Human Remains and Funerary/Sacred Objects Discovery Plan

AMMENDED Excerpt from the Integrated Cultural Resources Management Plan for Santa Susana Field Laboratory, Ventura County, California

SOP #4 Treatment of Human Remains and Funerary/Sacred Objects

The NAGPRA requires the inventory of human remains and funerary and sacred objects recovered from Federal lands that may be subject to claim by Native American tribal groups. The NAGPRA also requires active consultation with such groups to determine the disposition of such remains and objects. No Native American human remains or sacred/funerary objects are currently known to exist on the SSFL; however, previously undocumented excavations may have encountered human remains and/or sacred/funerary objects and future undertakings may inadvertently encounter these materials. This SOP outlines the policies and procedures to be followed to ensure future compliance with the NAGPRA.

Applicable Laws/Regulations

- Native American Graves Protection and Repatriation Act.
- American Indian Religious Freedom Act Policy.

No Native American human remains, funerary objects, or sacred objects from the SSFL will be knowingly kept in Government possession without preparation of an inventory and initiating consultation.

Consultation regarding the disposition of Native American human remains, funerary objects, or sacred objects shall be initiated as soon as feasible.

Procedure

The Cultural Resources Manager (“CRM”) will ensure that NASA complies with NAGPRA requirements and the implementing regulations (43 CFR Part 10).

- I. The CRM will review all records and collections to determine whether any human remains, funerary objects, or sacred objects originating from the SSFL are known to exist.
 - A. If no such objects are found, no consultation is required.
 - B. If any such objects are found to be uninventoried, the CRM will prepare an inventory of all such objects and will initiate consultation procedures with the Archeological Assistance Division National Park Service (Post Office Box 37127, Washington, D.C. 20013; telephone 202-343-4101; facsimile 202-523-1547) and federally recognized tribes to determine appropriate disposition.
- II. If human remains or artifacts that are not currently in Government possession but that are suspected to be from the SSFL are returned to the Government, the CRM will arrange to have a qualified professional examine and evaluate them.

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

- A. If the remains are not of human origin, then no further action by the CRM is necessary.
 - B. If the remains are not of Native American origin, then they will be treated as stipulated as an emergency discovery of archeological deposits (see SOP #3).
 - C. If the remains are of Native American origin, then the CRM will prepare an inventory of the remains and initiate consultation procedures with the Archeological Assistance Division, NPS.
- III. If human remains are discovered during the course of any undertaking, the following procedures will apply:
- A. Work will immediately cease in the vicinity of the human remains.
 - B. The site supervisor will immediately notify SSFL/MSFC Law Enforcement/Center Protective Services and the CRM.
 - 1. SSFL Law Enforcement/Center Protective Services officers will notify the County Coroner within 48 hours, the State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98.
 - a) If the Coroner determines the human remains to be Native American, the Coroner is responsible for contacting the NAHC within 24 hours after the determination is made. The NAHC, pursuant to Section 5097.98, immediately will notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment or disposal. After the Coroner has established whether the remains are archeological or historical, NASA will follow the California state requirements. If the remains are prehistoric, NASA will initiate the proper procedures under the Archeological Resources Protection Act of 1979 and/or the NAGPRA to decide the disposition of the materials. If the remains are found to be Native American, the steps outlined in NAGPRA, 43 CFR 10.6 (Inadvertent Discoveries) must be followed.
 - b) If the remains are not of Native American origin, then the site will be treated as the discovery of emergency archeology deposits. However, it should be noted that not all human remains, cemeteries, etc., are NRHP properties.
 - c) If the remains are of Native American origin, then further work in the vicinity will be suspended for 30 days to allow for consultation, as required by the NAGPRA. If any photographs are taken of the undertaking, only general photographs of the site area are to be taken. Prior to removal of any remains, the CRM will prepare an

PROGRAMMATIC AGREEMENT AMONG NASA, CA SHPO, ACHP REGARDING DEMOLITION AND SOIL AND GROUNDWATER CLEANUP AT SSFL, VENTURA COUNTY, CA

inventory of the remains and will immediately initiate emergency consultation procedures with the Archeological Assistance Division, NPS, and tribes.

- C. If consultation allows the remains to be removed, then the CRM will cause the remains to be treated and disposed in accordance with the consultation.
- D. Notwithstanding the results of consultation, the CRM will ensure that Section 106 procedures are adhered to with regards to evaluating sites.