From:	Chester King
To:	MSFC-SSFL-EIS
Subject:	Santa Susana Field Lab DEIS
Date:	Tuesday, September 24, 2013 10:22:17 AM
Attachments:	Burro Flats DEIS Cultural Resources.pdf

Dear Allen Elliott,

The attached pdf contains my comments concerning the Santa Susana Field Laboratory DEIS.

Chester King

Draft comments by Chester King concerning Draft Cultural Resources Study for Environmental Cleanup and Demolition at Santa Susana Field Laboratory, NASA Areas I and II, Ventura County, California

by Chester King 9-24-2013

I am a professional archaeologist and I specialize in the study of the prehistory of California. I have served as President and Vice-president of the Society of California Archaeology. I began studying the archaeology of southern California in 1960 and have continued to study the archaeology and ethnohistory of southern California native peoples until the present. I have written chapters of the Handbook of North American Indians volume on California produced by the Smithsonian Institution. My dissertation, *Evolution of Chumash Society*, was selected for publication in a series of 31 outstanding dissertations concerning the archaeology of North American Indians. My writings are frequently referenced, and I am recognized as a leading specialist in the field of California Native American archaeology and ethnohistory. I have concentrated on study of the Native American archaeology of the Santa Monica Mountains and the Simi Hills. I have conducted many archaeological studies for the Santa Monica Mountains National Recreation Area and have conducted surface surveys of lands administered by the MRCA adjacent to the project area. I have experience conducting inventory studies, significance testing programs, and data recovery programs for federal, state, and local agencies and private developers. Over the past several years, I have been studying beads, other ornaments, bone tools, and stone projectile points from collections excavated from project area Burro Flats site recorded as VEN-1072. The collections were obtained from a small central area of the site during excavations conducted in the 1950s by an archaeology society and a college field class. I have also visited project area site VEN-1072.

The discussion of archaeological sites in the DEIS is based on a report attached to the DEIS as Appendix C. The Appendix C study is inadequate. A study by archaeologists with local knowledge and experience that includes the results of subsurface testing and provides real estimates of the costs of a data recovery program is necessary to complete the EIS and make informed decisions concerning impacts to National Register eligible properties. The new report should be subject to public review and its recommendations should be included in a new DEIS that will also be subject to public review. The archaeologists who conduct the study should not be employed by a company that stands to benefit from the cleanup project.

The report does not adequately assess the project area

The most serious problem with the cultural resources report is absence of information necessary to assess the impact of the project on Native American sites. The report fails to describe all cultural resources that may be disturbed by the project. The report does not contain information adequate to design a data recovery program and estimate its cost.

The report relies exclusively on surface observations. Adequate assessment of the project impacts requires controlled archaeological subsurface testing to identify the boundaries, depths, and contents of archaeological deposits.

The report indicates artifacts were recorded as isolates. These isolates are apparently outside the areas described in the report as archaeological sites. The isolates are not described in the report. In my experience after subsurface testing or careful observation of the surface under good conditions near areas where 'isolated' artifacts were recorded during an initial surface survey, more than five artifacts are usually discovered. Isolates then gain the status of sites whose boundaries and significance need to be determined.

Surface observations by archaeologists are largely affected by ability to see the ground surface. Impediments include plant cover, leaf litter, presence of road fill or other recent deposits such as graded pads, recent grading, or presence of piles of rodent-hole back-dirt. Sometimes disturbance results in exposure of buried deposits at other times it results in burial of artifacts. Surface observations are also dependent on ability of archaeological crew to identify artifacts commonly observed on the surface of sites in the Simi Hills. In my experience, even well trained crews include some surveyors who observe more artifacts than other surveyors. After indications such as an artifact are discovered the degree of persistence in following leads often makes the difference between designating a find a site or an isolate. When artifacts are discovered the area around them should be carefully searched. If additional artifacts are found, the areas around them and on the same landform should be carefully checked. This may require walking or crawling transects no more than a meter apart. The report notes that a large portion of the landscape is bedrock and is devoid of soil and uses this as an excuse for not walking over parts of the project site. Bedrock at Burro Flats contains cupules, mortars and other culturally significant modifications, some of which are extensive. All areas of bedrock should all be carefully checked. The soil bodies between the bedrock should also be carefully checked, the description of survey procedures indicate some soil bodies may have been walked across once at best. Rockshelters that contain soil deposits are normally recorded as features and therefore as sites.

The report recognizes that it is inadequate. It admits site deposits may be present that would have been identified using standard techniques. It states:

> Plant Area I and Area II has some potential to result in adverse effects to buried archaeological resources. The areas possessing low to moderate sensitivity for buried deposits are within alluvial deposits, particularly Holocene-age sediments. Areas with a higher sensitivity for buried resources are near and within the boundaries of archaeological sites CA-VEN-1072, where known subsurface deposits have been documented in previous studies, and sites CA-VEN-1800 and CA-VEN-1803 [page C-51].

Also,

> Aside from the initial recordation, neither site CA-VEN-1800 nor site CA-VEN-1803 have been subject to further study and the depth of deposits is unknown. Important archaeological deposits with no surface expression may be buried beneath Holocene alluvial sediments.
>
> Appropriate measures, such as preparing a plan for unanticipated discoveries, should be implemented to address the possibility of impacts on buried resources from the undertaking [page C-52].

The report recommends developing plans to save information from undiscovered sites after they are discovered during earthmoving activities. If for instance a cemetery is discovered, a decision made on the basis of this DEIS to remove the soil containing the cemetery will result in destruction of the cemetery.

The EIS can't be complete until the impact of the project on all project area archaeological deposits is determined. It is necessary to use archaeological techniques traditionally used to determine the presence of archaeological deposits. The techniques should be adequate to demonstrate presence or absence of human activities. Conduct of an adequate number of controlled subsurface excavations with soil being sifted through fine mesh water screens, laboratory sorting by people experienced in the identification of artifacts found at local sites, study of significant soil constituents, and report preparation by people who have knowledge of local archaeology, can determine the presence or absence of site deposits in the project area. It should not be necessary for volunteers or paid monitors to pick up pieces of significant and sensitive site areas discovered after the review process while they are being destroyed during monitoring because a consultant did not adequately evaluate the project area. Monitoring is not adequate to recover information concerning many significant categories of artifacts or features.

The boundaries of the sites identified in the DEIS are based only on surface observations. In some cases the sites may be surrounded by bedrock and their boundaries appear to be clear. However, it is possible that the sites recorded in the project area are all parts of a larger site that may include VEN-1072 (VEN-1072 includes many previously separate sites now recorded as one large site as a consequence of an intensive surface survey). Possibly all surrounding bodies of soil contain archaeological materials.

In addition to determining the boundaries of sites, the cultural resource study needs to determine the scope and costs of archaeological data recovery programs. The report should contain enough information to allow archaeologists to design and estimate the costs of data recovery programs. These costs are largely dependent on volume of site deposits that are present and the numbers of artifacts and features

that are expected to be encountered. Information necessary to estimate the costs of data recovery can only be obtained by conducting excavations similar to those that will be conducted during data recovery.

The existing information is not adequate to estimate the cost of data recovery programs. If bids are sought using the available information, local experienced archaeologists will not be able to make bids because they will fear the consequences of underbidding. Only non-local archaeologists who make low bids on the basis of inadequate information will be chosen and the data recovery program will be inadequate, both because the archaeologists will not recognize the resources and they will not have adequate funds.

The Burro Flats area probably contains one or more cemeteries

The residential midden at VEN-1072, contains all of the types of artifacts and types of faunal remains found in residential sites in the area. The remains have similar relative frequencies to the remains in documented village sites. The size of the midden and distribution of temporally sensitive artifacts within the midden indicates the presence of several households with regular residence at the site. A cemetery was found 1000 feet from the contemporary Late Period residential deposit at the Medea Creek site in Agoura Hills and the cemetery could be located a similar or greater distance from the residential area at Burro Flats. No cemetery has been identified during archaeological excavations at Burro Flats and it is expected that one or more cemeteries (probably from different time periods) are present within or in the vicinity of the site in areas that have not been tested, or disturbed by development at Burro Flats. The cemetery or cemeteries may contain the bodies of many people including important leaders. A recent Section 106 study at a project in west Los Angeles avoided identification of a cemetery using the excuse of inability to test the site because of the presence of recently deposited overburden. Because it was not discovered during the planning phase, the cemetery containing over 500 bodies was removed at a cost of approximately five million dollars and there is no report of what was discovered. If the cemetery had been identified during the planning stage of the project, the creek could have been placed in its old channel adjacent to the cemetery in an area that is now open space without reducing the number of units developed or making significant changes in the development footprint. A similar situation could develop at Burro Flats where there is no excuse of difficulty caused by deep overburden. Testing is necessary to determine the significance of site areas and needs to be adequate to develop meaningful data recovery programs or design special avoidance programs if highly sensitive areas will be damaged by the project.

There are indications that the Burro Flats area served as the site of important festivals and may have been a trade center.

The main panel at the site includes what have been identified as *Ko-too-mut* poles (Edberg 1985). Merriam described a Tongva mourning ceremony at Tejon where the poles covered by pierced baskets were prepared and erected at the ceremony site and near the end of the ceremony were moved to and erected at the

cemetery. The people at El Escorpion possessed a song that probably organized their mourning ceremony. It is probable that ceremonies were held at the Burro Flats sites. People who attended ceremonies from settlements other than El Escorpion, including people from distant tribes such as the Mojave of the Colorado River and the Yokuts of the San Joaquin Valley (peoples who visited San Fernando Mission after the El Escorpion people were recruited there), probably camped during the festival at places in the Burro Flats area. Camps of visitors at ceremonies may contain little manufacturing refuse and few shaped artifacts used to prepare food. Such sites are most likely to be identified as isolates during surface surveys. Campsites of distant people may contain fragments of exotic materials from repairing or breaking artifacts. They may contain fragments of pottery made in distant places. There may also be other exotic goods in the sites that were brought for trade.

The background section discussion of Native American history demonstrates lack of knowledge of archaeology in the region.

The cultural resources report background section appears to be adapted from a poor boilerplate that concerns archaeology in Orange or San Diego Counties.

On page C-24 it is suggested that Indians overexploited and reduced their available resources. This suggestion has a great deal of appeal to those archaeologists who like to denigrate traditional societies. It basically holds that American Indians had no better ethics regarding land use than European colonists. This justifies expropriation of Indian land by Europeans. The archaeologists propose overexploitation despite the presence of Native beliefs that required extensive purification of hunters and often restrictions on consumption of kills by hunters. If European colonists had to refrain from sexual intercourse, refrain from eating desired foods, and sweat and pray before hunting, they would not kill as many animals. It is reasonable to assume that Native people recognized the benefits of enhancing the sizes of deer populations and the populations of other animals and plants they used for food. If population growth required the eating of more small animals, an increase in proportion of small animal bones doesn't indicate a decrease in the number of living large animals as claimed by proponents of overexploitation. The large animals may have continued to be managed at optimum herd sizes. It is also probable that reduction of small animal bones due to differential breakdown has influenced the portions of bones of different sizes recovered from sites of different ages.

It is stated that new studies indicate rapid rather than gradual culture change. There is no uncontested data that demonstrates anything other than a continuous, gradual growth of Chumash society over at least the last 7000 years. There is a continuous development of bead and ornament types with addition of new types and discontinuation of old types. The changes can be explained as consequences of historic events and changes in the relative importance of economic, political, and religious subsystems.

On page C-22, it is stated that there is no accepted chronology. Perhaps the author of the report does not accept the California chronology. However, archaeologists who publish peer reviewed articles reference an accepted chronology. In 1939 Lillard, Heizer, and Fenenga published a report that described three successive chronological time periods in Central California. Identification of the periods was largely based on differences in burial practices and burial goods including beads and ornaments. James Bennyhoff used burial lot seriation to further refine the periods. In the San Francisco Bay and the Plains Miwok area, Bennyhoff recognized five subdivisions of the Middle Period, a Middle-Late Transition Period, and five subdivisions of the Late Period before the establishment of Spanish Missions (Elsasser 1978). Research for my dissertation involved the use of burial lot seriation to document the sequence of beads and ornaments in the Santa Barbara Channel. I identified three discontinuous phases of the Early Period and a continuous terminal Early to the period of Spanish missions sequence that includes eight subdivisions of the Middle Period (it includes a sub-phase corresponding to Bennyhoff's Middle-Late transition) and five or six subdivisions of the Late Period that preceded the establishment of Spanish missions. The Central California sequence includes many diagnostic types that were traded from the Chumash area and the sequences are correlated. Most temporal subdivisions recognized in the Chumash area between AD 1150 and 1770 lasted less than 100 years. California archaeologists have not disputed this temporal sequence. There is constant dispute and refinement of the actual dates marking the beginnings and ends of subdivisions and whether or not beginnings and endings correlate with imagined or real catastrophic environmental changes. I am presently working on studying the distribution of types in California from the Southwest and types in the Southwest from California to cross-date the southern California and Southwestern sequences and thereby refine the absolute dating of the phases at the end of the Middle Period and during the Late Period. I know of no dispute regarding the sequence and identity of the temporal subdivisions. Archaeologists who have theories diametrically opposed to mine who deny the validity of my interpretations regarding the causes and sequence of social development, but who work within historic Chumash boundaries, reference the sequence described in my dissertation. The sequence described in my dissertation was in large part discovered in central California before I started my research with collections from the Chumash area, it is not my creation. Although they were brilliant people, the archaeologists who discovered the central California sequence (Heizer, Fenenga, and Bennyhoff) held theories and perceptions that differ significantly from mine. All of us agreed on the detailed chronologies of artifacts that we discovered through use of burial lot seriation. Burial lot seriation is based on a assumption that objects placed with burials were placed at the times of burial. Changes in types and frequencies over time result in the ability to arrange burial lots in temporal sequences and observe changes in artifacts over time in relation to changes and continuity in use of other artifact types. Burial lots and other caches of artifacts that represent events allow archaeologists to discover the most refined sequences of changes in artifacts allowed by archaeological data. Californian bead and ornament sequences are supported by information besides lot seriation

including: stratigraphic superimposition, AMS radiocarbon dates on beads, and cross-dating with sequences in the Great Basin and the Southwest that were independently established using sources of information including tree rings, radiocarbon dates, and stratigraphic context. Evidence indicates the Chumash manufactured many temporally significant bead types found in central California, Nevada, and Utah.

Other comments

On page C-55 it is stated that if human remains are discovered NASA will follow California state requirements. California law places decisions in the hands of a most likely descendant. Federal law places decisions in the hands of a recognized tribe. How will the discrepancy be handled?

Presumably grading and filling will occur at a site used to dispose of the soil taken from the project site. The DEIS does not address impacts to historic properties at disposal sites. It is possible that the impacts at disposal sites could be as severe as the impacts at the Burro Flats project site.

Conclusion

In conclusion, the Chumash cultural sites in the Burro Flats area are too significant to be managed by people who lack expertise. Perhaps a panel including Chumash, other concerned local Native Americans, and archaeologists with experience and knowledge of archaeology in the vicinity of Burro Flats could be formed to review cultural resource studies and review proposals to conduct data recovery. The panel would be responsible for insuring that money and resources are not squandered as has been the case on some other large projects. The panel would attempt to insure that adequate and sensitive data recovery or other mitigations are designed and conducted. If the cultural resource study in the DEIS had been adequately reviewed, and if reviewers comments were adequately responded to prior to report drafting, there would be fewer substantial comments, and the EIS and NHPA Section 106 process would be able to more easily move forward, at least as regards cultural resources.

The report admits it does not identify and assess cultural resources that may be damaged by the project. The presence or absence of the possible resources can be identified using standard subsurface testing procedures. These procedures have been used during evaluation of similar projects. It is necessary to conduct studies using accepted procedures to evaluate the locations, boundaries, and contents of cultural resources that will be affected. This information is necessary to make informed decisions regarding the fate of cultural resources and types of remedial action that can be performed. Removal of a cemetery has different social, emotional, and cost impacts than removal of a camping area after conduct of a data recovery program. The contents of archaeological site areas that will be affected need to be determined to design the best possible mitigation program. Perhaps procedures could be used to remove contamination without significantly disturbing sensitive areas such as cemeteries.

Referenced sources

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I have a general non-specialist comment. The project will certainly have adverse impacts to cultural and natural resources and will be, at best, a public bother from traffic and pollution. The DEIS fails to address what should be a central question of whether conduct of the project will lessen or increase exposure of people to pollutants proposed to be removed from the site and whether it will cause more death and disease than alternatives. The use of earth excavating and earthmoving equipment will result in removing plant cover and loosening soil. Soil is more apt to become air borne. Sometimes during Santa Ana Winds or heavy winds from other directions dust clouds are formed that cover the entire San Fernando and Simi Valleys. Accidents on roads possibly followed by rains could result in uncontrolled dispersal of pollutants in runoff. Also deaths from truck accidents could result aside from pollution. Exposure during use of heavy equipment and post disposal pollution at disposal sites may also occur. What will the net public health benefit be from conduct of the project, as opposed to the no project or lesser project alternatives? This question needs to be answered in the EIS. The EIS should not protect a politically motivated agreement. It should provide objective information necessary to make good decisions. If the project will save one life at the expense of the death three as well as destroy significant cultural and natural areas, it is not a good project. Perhaps designation of the area as passive recreation and natural preserve land with limited public access and maintenance of existing ground cover would result in less exposure of people to pollutants than the proposed project. An alternative project that would reduce the most dangerous concentrations of pollutants to acceptable public health standards, might be best.