CRM TECH
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Colton, CA 92324

September 26, 2018

Ken Anderson
General Atomics Aeronautical Systems, Inc.
22500 East Avenue R-8
Palmdale, CA 93591

Re: Supplementary Survey and Extended Phase I Archaeological Testing Program
El Mirage Field Runway Extension Project
Shadow Mountains Area, San Bernardino County, California
CRM TECH Contract No. 3269

Dear Mr. Anderson:

At your request, CRM TECH conducted a supplementary field survey and an Extended Phase I (XPI) archaeological testing program as a follow-up to the previously completed Phase I cultural resources study for the project referenced above (Tang et al. 2017). As currently proposed, the project entails primarily the extension of the existing runway and taxiway at El Mirage Field; the construction of a new hanger, office buildings, and other facilities; and infrastructure improvements such as a fire access road and storm drain system.

Prior to the commencement of this study, approximately nine acres of land that had not been surveyed for cultural resources were added to the project area. In total, the project area now encompasses approximately 98 acres of mostly undeveloped land, located mainly in the eastern portion of the El Mirage Field property, within Sections 10 and 11 of T6N R7W, San Bernardino Baseline and Meridian (Fig. 1).

The supplementary survey effort was focused on the recent addition to the project area, and the XPI program was implemented in response to recommendations by the San Manuel Band of Mission Indians during consultations with the County of San Bernardino under provisions of Assembly Bill 52. The purpose of the XPI program is to assist the County in assessing the sensitivity of subsurface sediments in the project area for buried archaeological remains that may constitute "historical resources," as defined by the California Environmental Quality Act (CEQA).

In order to accomplish this objective, CRM TECH conducted an intensive-level archaeological survey of the newly added portion of the project area, a reconnaissance-level inspection of the rest of the project area, and the controlled excavation of a total of 14 backhoe trenches. This letter presents a brief summary of the methods and results of these research procedures.

Background

As you know, CRM TECH performed a standard Phase I cultural resources study for this project in July and August 2017, which included a historical/archaeological resources records search, consultation with Native American representatives, historical and geoarchaeological background

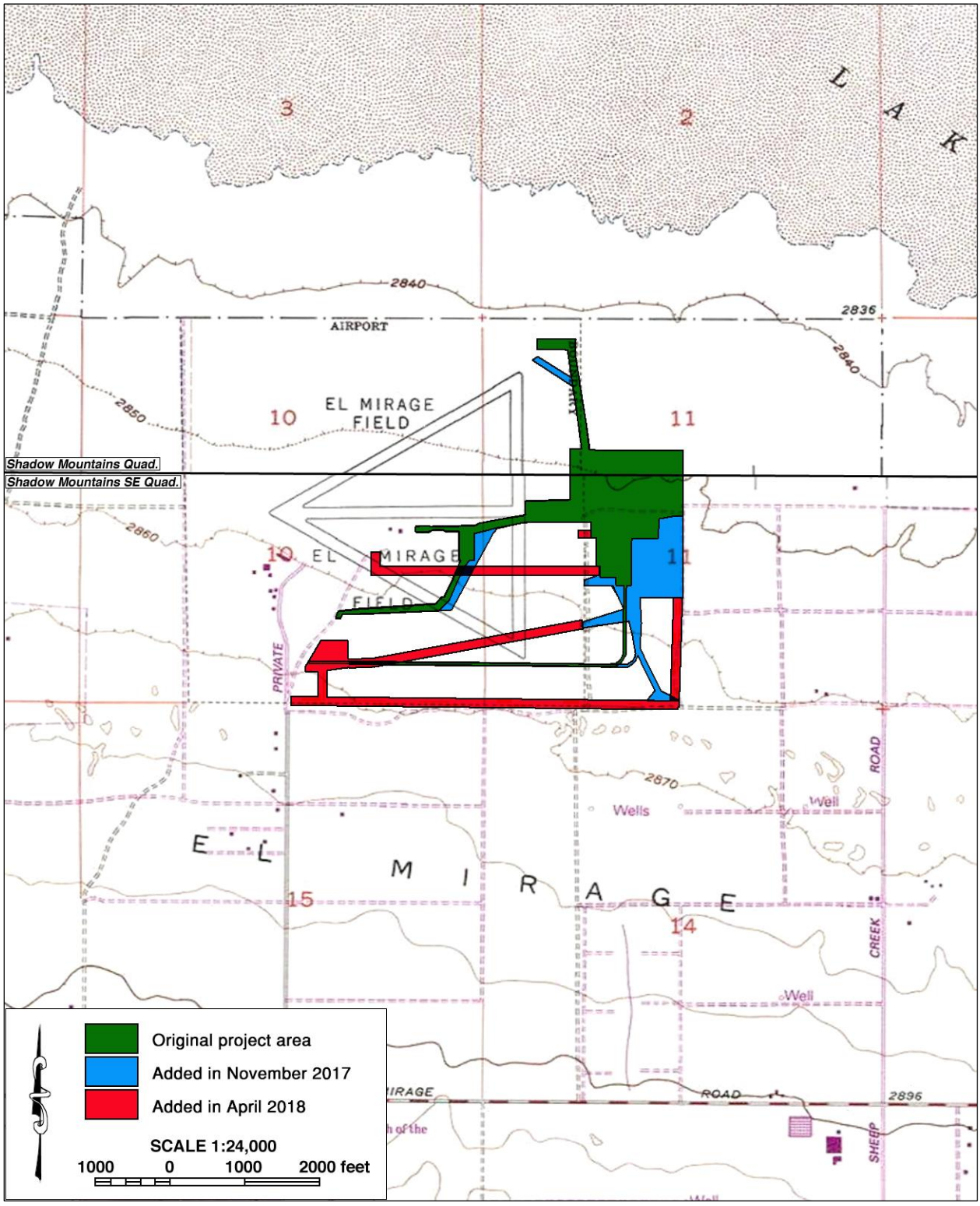


Figure 1. Project location and survey dates. (Based on USGS Shadow Mountains and Shadow Mountains SE, Calif., 1:24,000 quadrangles, 1993 edition)

research, and an intensive-level field survey of the original project area (Fig. 1; Tang et al. 2017). As a result of these procedures, two small segments of the abandoned WWII-era runways at El Mirage Field that cross the project area were recorded as Site 36-031274 (CA-SBR-31274H) but were determined not to meet the definition of a "historical resource" (*ibid.*:14). At the conclusion of the Phase I study, archaeological and Native American monitoring was recommended for earth-moving operations in the project area due to the potential of encountered subsurface cultural deposits of prehistoric origin (*ibid.*:15).

In November and December 2017, CRM TECH and the San Manuel Band of Mission Indians monitored initial grubbing and grading activities in the project area and excavations for the flood-control works (Tang 2018). As a part of the monitoring program, approximately 24 acres of vacant land that had been added to the original project area by that time were surveyed by CRM TECH personnel (Fig. 1). The field procedures resulted in the recordation of the remains of 1930s Ford Model AA stake-bed truck and two prehistoric lithic flakes within the expanded project boundaries (*ibid.*:5-8). These localities were subsequently designated Site 36-031711 (CA-SBR-031711H) and Isolates 36-031712 and 36-0317113, but none of them was found to meet CEQA's definition of a "historical resource" (*ibid.*:9).

All of the artifacts recorded during the monitoring program were discovered on the ground surface, and no subsurface cultural remains of either prehistoric or historical origin were encountered during on-site monitoring of the earth-moving operations (Tang 2018:8). After the completion of that phase of the project, it was concluded through further consultation among the County of San Bernardino, the San Manuel Band of Mission Indians, and CRM TECH that continued monitoring of project ativities might not be warranted if an XPI program was implemented and revealed no evidence of any subsurface archaeological deposits.

Field Methods

The research procedures for the XPI program were designed in accordance with standard practices in the field of cultural resources management and in coordination with Jessica Mauck, Cultural Resources Analyst for the San Manuel Band of Mission Indians. The archaeological fieldwork was carried out on July 23 and 24, 2018, under the direction of CRM TECH principal Michael Hogan and the supervision of field director Daniel Ballester (see App. 1 for qualifications). CRM TECH archaeologists John D. Goodman II and Salvatore Boites (see App. 1 for qualifications) served as field crew members.

Prior to subsurface excavations for the XPI program, the ground surface in the newly added nine-acre portion of the project area (Fig. 1) was surveyed systematically at an intensive level by walking a series of parallel transects spaced 15 meters (approximately 50 feet) apart. Visibility of the native ground surface ranged from poor (0% to 25%) where pavement was present or vegetation was dense to excellent (> 90%) where the vegetation had been cleared or the growth was naturally sparse.

The backhoe trenches were placed at relatively undisturbed locations where ground disturbances are anticipated during the upcoming phases of the project (Fig. 3). Measuring 5 to 15 meters in length and 1 meter in width, the trenches were excavated to a minimum depth of 1 meter. Selected samples of the excavated soil were screened through a half-inch hardwire mesh, and trench sidewall profiles were hand-drawn in the field to record the soil stratigraphy.

Results and Findings

No archaeological features or artifacts of prehistoric or historical origin were observed in any of the trenches or in the screened soil samples. During the survey of the latest addition to the project area, a schist metate fragment was found on the surface and recorded as Isolate 3371-1 (Fig. 3; see App. 2 for details). The artifact was collected, analyzed at the CRM TECH office, and prepared for permanent curation upon completion of this study. As with Isolates 36-031712 and 36-0317113 recorded during the monitoring program, isolates like this metate fragment by definition do not qualify as an archaeological site due to the lack of depositional context, and are therefore not considered potential "historical resources" under CEQA guidelines. Nevertheless, Trench 14 was excavated at the location of the isolate in search for any subsurface cultural remains.

Figure 3. Isolated metate fragment found on the ground surface. (Photograph taken on July 23, 2018)

The trench sidewall profiles show the soil stratigraphy in the project area to be largely uniform, with the top 10-30 centimeters consisting of loose sandy loam. Soils in this top layer have been impacted by past airfield use, road construction, and agricultural operations. Vegetation roots, where present, penetrate to about 30 centimeters below the surface. Underneath the disturbed surface soil is an approximately 40-centimeter stratum of semi-compacted silty sand with some clay, underlain by a layer of loose sand that varies in thickness from 10 to 40 centimeters. The last stratum below the loose sand to the bottom of the trench is a semi-compacted to highly-compacted silty sand with some clay.

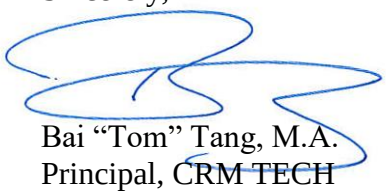
Conclusion

In summary, although another prehistoric isolate was recorded on the ground surface during the field survey of the latest addition to the project area, no subsurface archaeological remains were encountered throughout the XPI excavations. The backhoe trenching demonstrates that the surface and near-surface soils in the project area have been disturbed to the depth of up to 30 centimeters. Combined with results of the monitoring program undertaken in November and December 2017, the results of the present study suggest that the project area is unlikely to contain any intact, potentially significant archaeological resources of prehistoric origin in subsurface deposits.

Based on these findings, CRM TECH reiterates the conclusion of the Phase I study that the proposed project will not cause a substantial adverse change to any known "historical resources," and further concludes that no additional monitoring or any other cultural resources investigation will be necessary for the project. However, if buried cultural materials are unearthed inadvertently during future earth-moving operations in the project area, all work in the immediate vicinity should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Thank you very much for this opportunity to be of service. If you have any question or need further information regarding the research results presented above, please do not hesitate to contact our office.

Sincerely,



Bai "Tom" Tang, M.A.
Principal, CRM TECH

Reference Cited:

Tang Bai "Tom," Michael Hogan, Terri Jacquemain, Daniel Ballester, and Nina Gallardo
2017 Historical/Archaeological Resources Survey Report: El Mirage Field Runway Extension Project, Shadow Mountains Area, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.

Tang Bai "Tom,"
2018 Letter Report: Archaeological Monitoring Program, El Mirage Field Runway Extension Project, Shadow Mountains Area, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.